WinFence

Version 2
User's Guide

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WinFence

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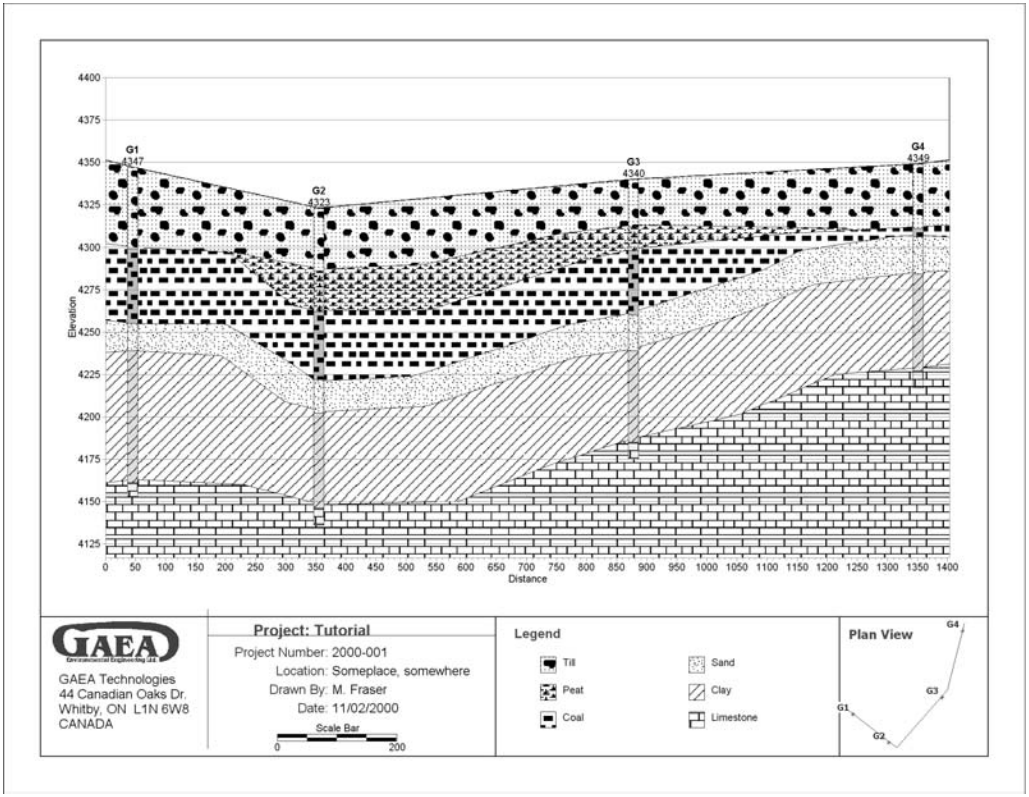
Introduction



Introduction

WinFence can be used to graphically create detailed, full-color, cross-sections and fence diagrams quickly and easily. The program can be used to interpret and map soil and rock layers, contamination, fossils, minerals and hydrocarbons.

Cross-sections are created by specifying the pathline on a location map for the project. The location map shows all of the wells entered in WinLoG and any existing cross-sections specified in WinFence. Pathlines can be straight or bent. When the cross-section is created the strata can be automatically generated using the program's built-in intelligence or they can be created manually.

A wide variety of strata can be used to create cross-sections using WinFence. Types of strata that can be used include layers, faults, lenses, intrusions, and alteration zones. Very detailed and complicated stratigraphy can be represented and easily drawn. Layers can contain multiple segments to represent uncomformities and erosion in highly faulted zones.

A unique snapping approach can be used to add layer, alteration zone, intrusion, and lense boundaries. This approach allows the boundary of one strata to be fixed to the boundary of another strata. Making the input of strata boundaries quick and accurate. Boundaries can be partially drawn and partially snapped. Snapped boundaries can include one or more different strata. In addition to snapping, strata boundaries can be assigned to the strata above or below.

The format of the cross-section is controlled by a template, that can be easily edited and customized. Templates are used to specify the format and position of the cross-section, title bar, legend block, location map, and scale bar. Company logos, bitmaps, text paragraphs, lines, arrows, and rectangles can also be added to templates. Once the template is created it is available to all projects. WinFence comes with several previously created templates, that can be further customized.

After the cross-section had been created it can be displayed in 3D along with other cross-sections in the project as a fence diagram. The 3D fence diagram display can be panned, zoomed, and rotated. The position of the user and the light source can also be easily moved.

WinFence shares the same database as WinLoG, and can be used to access and plot the borehole data entered in WinLoG. Several types of borehole data can be plotted on the cross-sections; including lithologic symbols, sample symbols, core logs, well diagrams, graphs, and geophysical logs. The actual borehole log data can be opened and edited in WinLoG by double-clicking on the borehole in WinFence.

All cross-section data for a project is stored in a Microsoft Access database. This database allows for the quick storage and retrieval of cross-section data and can be interfaced with a variety of other programs. There is no limit to the number of projects and cross-sections that can be stored in the database. The database is setup to work across a network if desired, with each project stored in a separate directory.

A master project database is maintained by the program to track the status and locations of projects. This database contains the project number, name, and directory location.

WinFence is compatible with Windows 2000/NT and XP, and supports all of the fonts, monitors, and printers available in Windows.

Features

The WinFence program has numerous features to make the entry, editing, and printing of cross-sections and fence diagrams easier and faster. In addition, the use of a standard database format means that the data is readily available to other applications.

New Features

- Fence diagrams can be generated, displayed and printed in 3D.

- Strata in cross-sections can be automatically generated by the pro grams built-in intelligence.

- Position of the user and light source can be dynamically moved in the 3D fence diagram.

- Graphical Information System (GIS) for displaying and picking boreholes and cross-sections in Winlog with Winfence. GIS can also display site features and import AutoCAD files.

- Intersecting cross-sections can be displayed on a cross-section.

- Intersecting cross-sections can be used when automatically generating a new cross-sections.

- Deviated boreholes can be displayed on a cross-section.

- Multiple water levels can be drawn on the cross-section. The first water level can be drawn automatically using the water levels stored in WinLoG

- The features (wells, grid, lines, etc.) shown on the location map can be turned on and off in the template.

• Polylines can be drawn any where on a cross-section.

• Deviated boreholes can be displayed on a cross-section.

• Program can now automatically update itself to the most recent version.

• Program now has online technical support, where it can email technical support all relevant files and information if there is a problem.

• All of the databases (Project, Project List, Main Database) are automatically backed up and can be easily restored.

• Projects and templates can have passwords assigned to control usage.

Existing Features

• Windows network compatible.

• Standard Windows file and print commands.

• Data is stored in a Microsoft Access database.

• No limit on the number of projects, cross-sections, and strata.

• Legend and header of the fence diagram can be fully customized.

• Title bar can contain any number and type of data.

• Legend can contain lithologic symbols with standard or custom lithology descriptions.

• Cross-section can contain a location map as an inset, showing the borehole locations and the pathline.

• Horizontal and vertical scales of the cross-section can be specified or automatically fitted by the program.

• Customizable scale bar can be placed anywhere on the cross-section.

• Selection of cross-section paths interactively in map view.

• Cross-sections can contain an unlimited number of boreholes and well logs.
• Cross-sections can contain an unlimited number of layers, lenses, intrusions, faults, and alteration zones.

• Boundaries can be snapped to other layers, faults or intrusions.

• Layers can contain multiple segments and may be discontinuous.

• Points defining strata boundaries can be graphically edited and deleted.

• Templates can be customized and re-used.

• Lithologic descriptions for legends are stored in the master or project databases and can be reused.

• An unlimited number of lithologic symbols can be used to represent different horizons, more than 100 are supplied with the program.

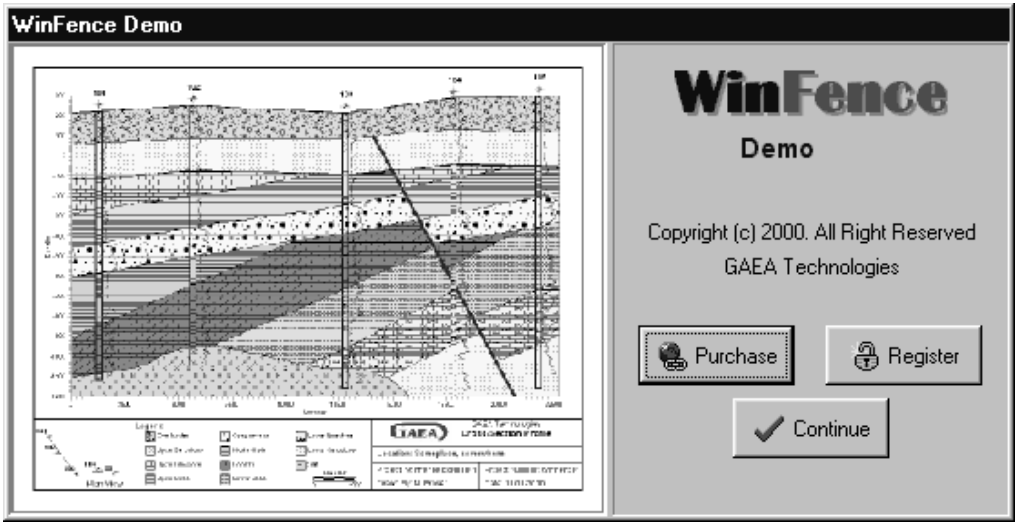
• Bitmaps, lines, text, and rectangles anywhere on the cross-section.

• Full-color printing of cross-sections.

• Cross-sections can be exporting to the clipboard, bitmap files or metafiles.

1.

Getting Started



1. Getting Started

Before you begin working with the WinFence program you should:

1. Check the contents of your distribution package;
2. Make sure you have the necessary equipment;
3. Run the installation program;
4. Read the README file;
5. Start the WinFence program.
6. Register the WinFence program.

The Distribution Package

The WinFence distribution package you received should include this User's Guide and a CD-ROM.

Required Equipment

WinFence requires the following hardware and software to run efficiently:

1. A graphics card that supports at least OpenGL version 1.2.1;
2. Windows2000/NT or XP;
3. At least 128 MB of RAM;
4. At least 64 MB of hard disk space.

Installing WinFence

To get WinFence up and running, run the installation program INSTALL.EXE on the CD-ROM. For example, to install from drive D:

1. Start Windows

2. Insert the CD-ROM into drive D;

3. Choose Start and then Run and type “D:\install.exe”, or double-click on “D:\install.exe” in Windows Explorer, or double-click on the Add/Remove Programs icon in the Control;

4. Enter the requested information in the installation forms, discussed in the next section.

On some computer systems, depending on how they are configured, inserting the CD-ROM into the drive will automatically start the GAEA demo program. In this case select WinFence from the demo screen. All of the programs listed on the demo screen can be installed and will run in demo mode until an unlock code is provided.

The SETUP program does the following:

1. Creates one or more directories on your hard disk and copies the contents of the WinFence disk into them;

2. Creates a Windows application group and installs the WinFence program and help icons.

If you are re-installing or upgrading the program, select Custom Setup. Using Custom Setup you can select not to install the empty databases, this will avoid over-writing your existing databases.

A complete list of files that are copied and the directories they are copied to is provided in Appendix C.

Requested Information

The installation dialog boxes will request the directories to store the WinFence program and databases, and the name of the application group for the WinFence program icons.

Network Installation

The following items should be checked before installing WinFence on a network:

1. Ensure that you have sufficient network rights to the drive on which you will install WinFence (on Windows XP/NT and 2000 systems you will need to have system administrator privileges);

2. Check to see if you have sufficient disk space available for the program files (at least 64 MB);

3. Verify that the drive letters that you specify during installation are consistent with those that are available on your server;

4. Make sure the total number of WinFence copies in use does not exceed the number that is licensed. If you need more copies than are currently licensed, contact GAEA to order additional licenses.

To install the WinFence program on a network server follow the installation instructions provided above. After the WinFence program has been installed the users must be given network access to the WinFence program directories and databases.

When installing a second user on a network do not install the databases from the CD. This will overwrite the existing master and main databases on the server.

When installing WinFence on a client PC, specify the directory on the server where the master database is stored as the main database directory.

README File

Any last-minute changes, additions or trouble-shooting tips are documented in the README file. When the SETUP program has finished installing the WinFence program, it will automatically install an icon for the README file in the application group. To view the README file click on this icon.

Uninstalling WinFence

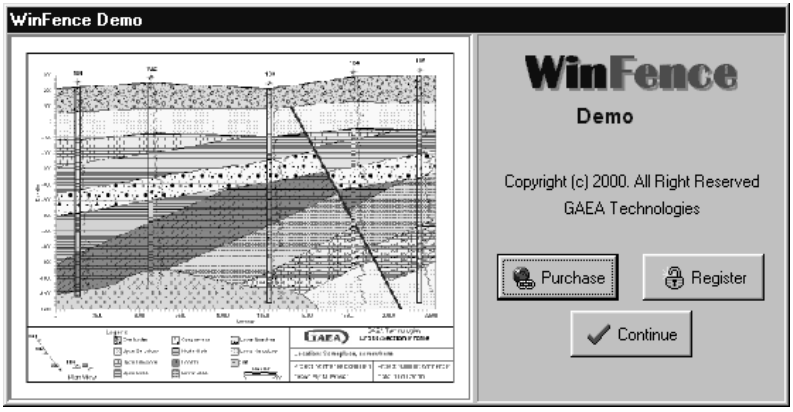
The WinFence program files can be removed from your hard disk using the Add/Remove programs option in the Windows Control Panel. Uninstalling the WinFence program will also remove the WinFence icons, and application group.

Registering and Unlocking WinFence

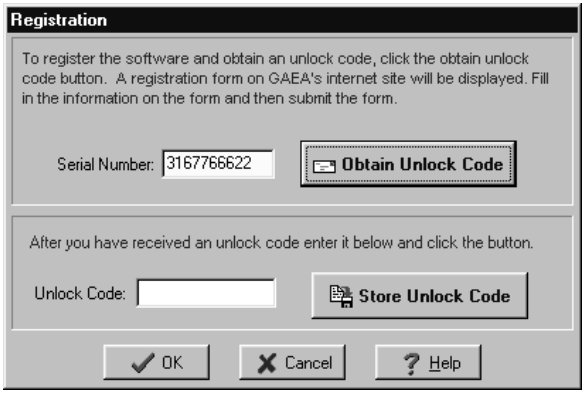
Before WinFence can be used it must be registered. Prior to registration process the program will run in Demo mode. During the registration the program will be unlocked.

Single User Registration

To register the program and obtain an unlock code, run the WinFence program. The first time the program is run it will operate in Demo mode and the form below will be displayed. This form can also be displayed using the Purchase menu item in the Help menu.



To register the program press the Register button, the Registration form shown below will be displayed. In the middle of this form a unique serial number will be displayed. This serial number is unique for each computer.


Registration
To register the software and obtain an unlock code, click the obtain unlock code button. A registration form on GAEA's internet site will be displayed. Fill in the information on the form and then submit the form.
Serial Number: 3167766622
Obtain Unlock Code
After you have received an unlock code enter it below and click the button.
Unlock Code:
Store Unlock Code
OK
Cancel
Help

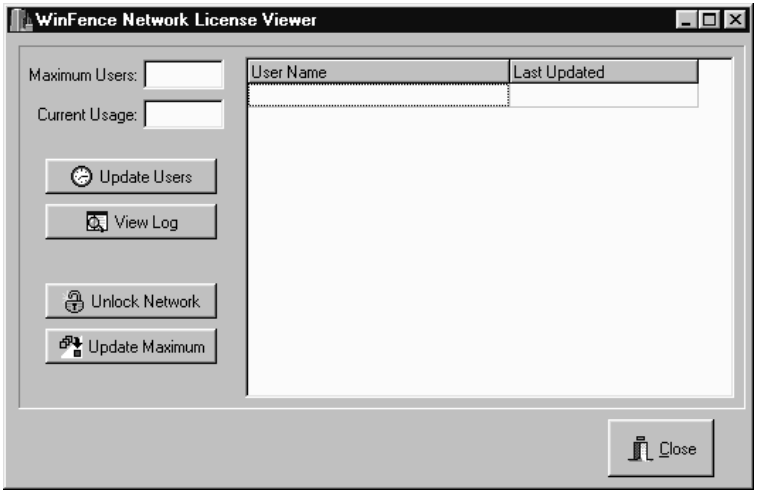
To register the program an unlock code must be obtained using this serial number. If your computer is connected to the Internet, you can obtain this unlock code by clicking on the Obtain Unlock Code button. After the button is pressed a registration form on GAEA's web site will be displayed on your internet browser. Fill out the form and then click on the submit button. After your registration information has been received an unlock code will be emailed to you.

If your computer is not connected to the Internet, you can call or fax us the serial number.

After GAEA has received your unique serial number, an unlock code will be generated and emailed or faxed to you. When you receive the unlock code enter it in the space at the bottom of the Registration form and then press the Store Unlock Code button. The WinFence program is now registered and the Demo form will no longer be displayed when the program is run.

Network Registration

Registering the program for a network with multiple users is a little different than for a single user. The Network Monitor program, shown below, is used to unlock the network and monitor program usage.



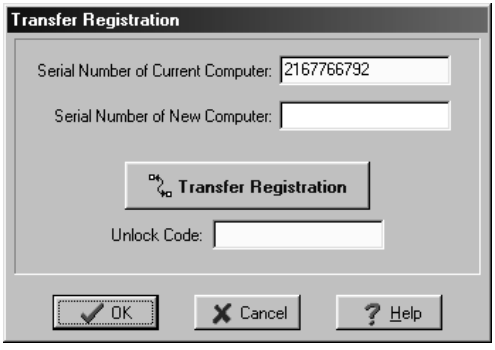
To unlock the program, start the Network Monitor program in the WinFence application group. Click on the Unlock Network button on the Network Monitor form. Then contact GAEA by email or telephone and provide the network serial and user numbers shown on the form. Enter the network and user unlock codes provided by GAEA and then press the Ok button.

Transferring the Registration

After the WinFence program has been registered, the unlocked program can be transferred to a different computer using the Transfer utility. This utility allows you to move the WinFence program between computers without requiring assistance from GAEA. After the registration has been transferred the WinFence program will only run on the new computer. The Transfer utility should be used with caution, since if incorrect serial numbers are entered you will lose the registration on both computers. If this happens contact GAEA for a new unlock code. Transferring the registration is a two step process.

Step 1. The first step is to obtain the unique serial number of the new computer. Install and run WinFence on the new computer. Initially the program will start in Demo mode and the Demo form will be displayed. Press the Register button and write down the unique serial number for the new computer.

Step 2. In the second step the Transfer utility is used to generate an unlock code for the new computer. Start WinFence on the old PC and select the Transfer menu item from the Help menu. The Transfer Registration form below will be displayed. Enter the serial number of the new computer and then press the Transfer Registration button. An unlock code for the new computer will be displayed. Enter this unlock code in the Registration form on the new computer, and then press the Store Unlock Code button.



After the Transfer Registration button has been pressed, WinFence on the old PC will be set to run in demo mode.

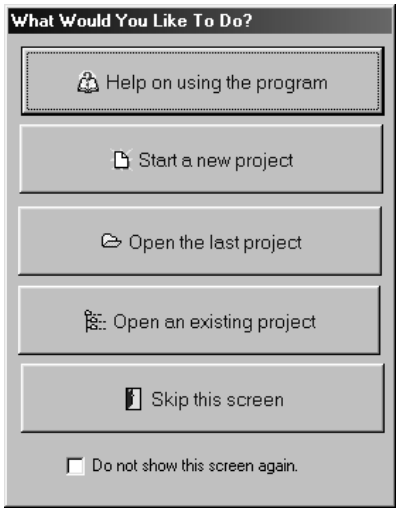
Using WinFence

This section explains how to interact with the various parts of the WinFence program. It discusses how to use the various toolbars and menus.

Starting WinFence

To begin working with WinFence after you have installed the program, start it by double-clicking on the WinFence icon in the WinFence application group.

When you first start the program a form will be displayed as shown below. After selecting an option and completing any additional forms, the main WinFence screen will be displayed.


What Would You Like To Do?
Help on using the program
Start a new project
Open the last project
Open an existing project
Skip this screen
Do not show this screen again.

The main window of the WinFence program consists of a title bar, menu bar, optional toolbars and desktop. In addition, popup menus can be displayed by clicking the right mouse button. This section explains how to interact with the various parts of the WinFence program.

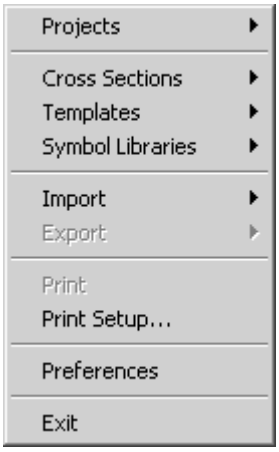
If you do not want the Startup form displayed every time you start the program, click on the “Do not show this screen again” box at the bottom of the form. This form can be turned back on using program preferences.

Menu Bar

The menu bar contains the main level of commands. It uses standard Windows pull-down menus. You can choose any menu item on any submenu that is not dimmed (WinFence will know when certain menu commands are not available, and prevents you from choosing them). The majority of these commands can also be selected using the speed buttons on the toolbars (see below). When the program is first started and no cross-sections or templates are opened, the File, View, Window, and Help items will appear on the menu bar.

File Menu

This menu contains commands similar to those in other Windows applications and contains the following submenu.



Projects - displays a submenu used to create, open, save, delete, close, and import projects.

Cross Sections - displays a submenu used to create, open, save, close, and delete cross sections (this menu item is dimmed if no project is currently opened).

Templates - displays a submenu used to create, open, save, close, and delete templates.

Symbol Libraries - displays a submenu used to create, open, save, close, and delete lithologic symbol libraries.

Import - used to import cross-sections and templates in exchange files.

Export - displays a submenu used to export cross-sections and templates to exchange files, bitmap files, metafiles, or the clipboard (this menu item is dimmed if no cross-section or template is currently opened).

Print - used to print cross-sections and templates (this menu item is dimmed if no cross-section or template is currently opened).

Print Setup - used to adjust the printer settings.

Preferences - used to set program preferences.

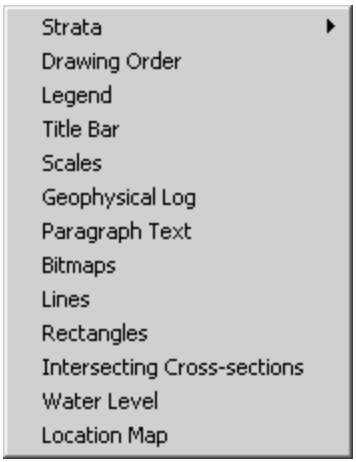
Exit - closes the program.

Edit Menu

After a cross-section, template, or symbol library has been opened the Edit menu will appear on the menu bar. The contents of the Edit menu will vary depending on what is currently displayed on the desktop.

Cross-Section

If a cross-section is currently displayed on the desktop the edit menu will contain the following commands.



Strata - displays a submenu that is used to add, edit, and delete strata.

Drawing Order - used to change the order that the strata are drawn on the cross-section.

Legend - used to specify which strata are to appear in the legend.

Title Bar - used to specify the data for the title bar.

Scales - used to specify the horizontal and vertical scales, and top and bottom elevation.

Paragraph Text - used to add, edit, and delete paragraph text on the cross-section.

Bitmaps - used to add, edit, and delete bitmaps on the cross-section.

Lines - used to add, edit, and delete lines and arrows.

Rectangles - used to add, edit, and delete rectangles.

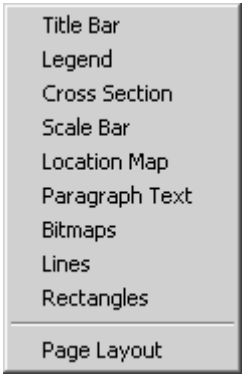
Intersecting Cross-sections - used to select which intersecting cross-sections to display.

Water Level - used to add, edit and delete water levels.

Location Map - used to edit the extents of the location map.

Template

If a template is currently displayed on the desktop the edit menu will contain the following commands.



Title Bar - used to edit the layout and data types for the title bar.

Legend - used to edit the layout and strata in the legend.

Cross Section - used to edit the layout, default scales, axes fonts, and borehole properties to plot.

Scale Bar - used to edit the position and format of the scale bar.

Location Map - used to edit the layout and format of the location map.

Paragraph Text - used to add, edit, and delete paragraph text on the template.

Bitmaps - used to add, edit, and delete bitmaps on the template.

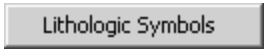
Lines - used to add, edit, and delete lines and arrows on the template.

Rectangles - used to add, edit, and delete rectangles on the template.

Symbol Library

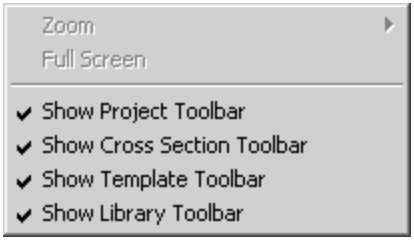
If a lithologic symbol library is currently displayed on the desktop the edit menu will contain the following commands.

Lithologic Symbols - used to edit the descriptions and symbols in the library.



View Menu

This menu contains commands for adjusting the view and toggling toolbars on and off.



Zoom - displays a submenu that can be used to select a zoom factor between 25 and 200 percent.

Full Screen - displays the cross-section in full screen mode (zoom factor equal to 100 percent).

Show Project Toolbar - if checked the Project toolbar will be displayed.

Show Cross Section Toolbar - if checked the Cross Section toolbar will be displayed.

Show Template Toolbar - if checked the Template toolbar will be displayed.

Show Library Toolbar - if checked the Symbol Library toolbar will be displayed.

Window Menu

This menu contains the standard Windows commands for selecting and arranging windows on the desktop.

Help Menu

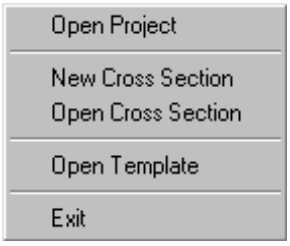
Accesses online help and information about the program.

Popup Menus

Popup menus can be displayed at any time by pressing the right mouse button. The menu that will be displayed depends upon what is currently displayed on the desktop.

Project Popup Menu

If no cross-section or template is displayed the Project Popup Menu will be displayed. This menu contains the following menu items:



Open Project - used to open an existing project.

New Cross Section - creates a new cross-section (dimmed if no project is currently opened).

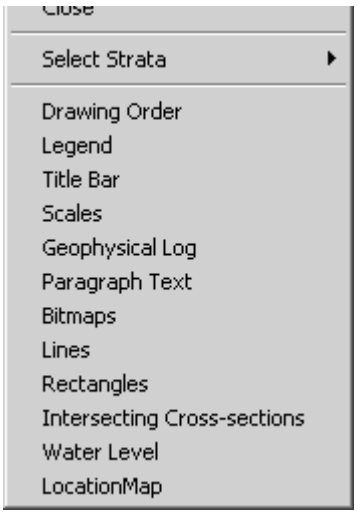
Open Cross Section - opens an existing cross-section (dimmed if no project is currently opened).

Open Template - opens an existing template.

Exit - exits the WinFence program.

Cross Section Popup Menu

If a cross-section is currently displayed on the desktop the Cross Section Popup Menu will be displayed This popup menu contains the following commands.



Save - saves the cross-section in the database.

Print - prints the cross-section.

Close - closes the cross-section.

Select Strata - displays a submenu that can be used to add or select a strata for editing.

Drawing Order - used to change the drawing order of the strata.

Legend - used to select strata to show in the legend.

Title Bar - used to enter data for the title bar.

Scales - used to set the horizontal and vertical scales and elevations.

Paragraph Text - used to add, edit, and delete paragraph text on the cross-section.

Bitmaps - used to add, edit, and delete bitmaps on the cross-section.

Lines - used to add, edit, and delete lines and arrows on the cross-section.

Rectangles - used to add, edit, and delete rectangles on the cross-section.

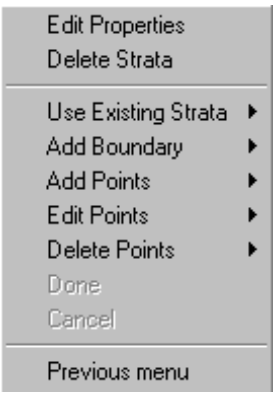
Intersecting Cross-sections - used to select which intersecting cross-sections to display.

Water Level - used to add, edit and delete water levels.

Location Map - used to edit the extents of the location map

Strata Edit Popup Menu

If a strata has been selected on the cross-section, the Strata Edit Popup Menu will be displayed. This popup menu contains the following commands.



Edit Properties - used to edit the description, color, symbols, and boundaries of the strata.

Delete Strata - used to delete the selected strata.

Use Existing Strata - used to graphically select an existing strata as the top or bottom boundary of this strata.

Add Boundary - used to graphically add the top or bottom boundary of this strata.

Add Points - used to graphically add points to the top or bottom boundary.

Edit Points - used to graphically edit points on the top or bottom boundary.

Delete Points - used to graphically delete points on the top or bottom boundary.

Done - used to end the editing of the top or bottom boundary.

Cancel - used to cancel the current editing of the top or bottom boundary.

Previous menu - used to un-select this strata and return to the Cross Section popup menu the next time the right mouse button is clicked.

Template Popup Menu

If a template is currently displayed on the desktop the Template Popup Menu will be displayed This popup menu contains the following commands.

Save - saves the template in the database.

Close - closes the template.

Title Bar - used to edit the layout and data types for the title bar.

Legend - used to edit the layout and strata in the legend.

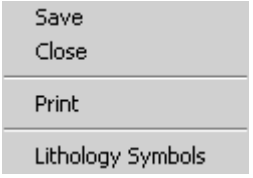
Cross Section - used to edit the layout, default scales, axes fonts, and borehole properties to plot.

Scale Bar - used to edit the position and format of the scale bar.
Location Map - used to edit the layout and format of the location map.
Paragraph Text - used to add, edit, and delete paragraph text.
Bitmaps - used to add, edit, and delete bitmaps on the template.
Lines - used to add, edit, and delete lines and arrows on the template.
Rectangles - used to add, edit, and delete rectangles on the template.

Symbol Library Popup Menu

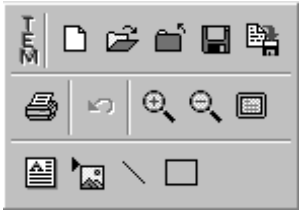
If a symbol library is currently displayed on the desktop the Symbol Library Popup Menu will be displayed This popup menu contains the following commands.

Save - saves the symbol library.
Close - closes the symbol library.
Print - prints the symbol library.
Lithologic Symbols - used to edit the lithologic symbols.



Toolbars

There are four toolbars that can be displayed on the desktop; they are the Project Toolbar, Cross Section Toolbar, Template Toolbar, and Symbol Library Toolbar. The display of the four toolbars is controlled in the View menu.



These toolbars can either float over top of the desktop or be docked to the top side or left side of the desktop. To make the toolbar float click and hole down the left mouse button on the edge of the toolbar. Then drag the mouse to where you want the toolbar and release the button. The number of rows in the floating toolbar can be adjusted by changing the size of the toolbar with the mouse.

The toolbars can also be collapsed and expanded by clicking on the 3-letter toolbar name at the beginning of each toolbar.

Each toolbar contains several speed buttons that can be used to perform the same tasks as the menu bar at the top of the desktop. These speed buttons are described below.

Project Toolbar

The Project Toolbar is used to create, open, and close projects.

Each of the speed buttons on the toolbar is explained below.

The **New** button is used to create a new project.

The **Open** button is used to open an existing project.

The **Close** button is used to close an open project (this button will be dimmed if no project is currently opened).

The **Fence Diagram** button is used to display a fence diagram for the project in 3D.

The **Help** button is used to display help on using the program.

The **Exit** button is used to exit the program.

Cross Section Toolbar

The Cross Section Toolbar is used to create and edit cross-sections. Each of the speed buttons on the toolbar is explained below.

The **New** button is used to create a new cross-section.

The **Open** button is used to open an existing cross-section.

The speed buttons below will be dimmed if no cross-section is currently opened.

The **Close** button is used to close a cross-section.

The **Save** button is used to save changes to the cross-section.

The **SaveAs** button is used to save the cross-section under a different name.

The **Print** button is used to print the cross-section.

The **Undo** button is used to undo changes to the cross-section.

The **Zoom-in** button is used to expand the cross-section.

The **Zoom-out** button is used to shrink the cross-section.

The **Full-Screen** button is used to reset the zoom factor to full screen.

The **Water Level** button is used to draw, edit, and delete water levels.

The **Paragraph Text** button is used to add paragraph text to the cross-section.

The **Bitmap** button is used to add a bitmap to the cross-section.

The **Line** button is used to draw lines and arrows on the cross-section.

The **Polyline** button is used to draw polylines on the cross-section.

The **Rectangle** button is used to draw rectangles on the cross-section.

The **Change Template** button is used to change the template that is used to format the cross-section.

Template Toolbar

The Template Toolbar is displayed below and is used to edit templates. Each of the speed buttons on the toolbar is explained below.

The **New** button is used to create a new template.

The **Open** button is used to open an existing template.

The speed buttons below will be dimmed if no template is currently opened.

The **Close** button is used to close a template.

The **Save** button is used to save changes to the template.

The **SaveAs** button is used to save the template under a different name.

The **Print** button is used to print the template.

The **Undo** button is used to undo changes to the template.

The **Zoom-in** button is used to expand the template.

The **Zoom-out** button is used to shrink the template.

The **Full-Screen** button is used to reset the zoom factor to full screen (100%).

The **Paragraph Text** button is used to add paragraph text to the template.

The **Bitmap** button is used to add a bitmap to the template.

The **Line** button is used to draw lines and arrows on the template.

The **Rectangle** button is used to draw rectangles on the template.

Symbol Library Toolbar

The Symbol Library Toolbar is displayed below and is used to edit symbol libraries. Each of the speed buttons on the toolbar is explained below.

The **New** button is used to create a new symbol library.

The **Open** button is used to open an existing symbol library.

The speed buttons below will be dimmed if no symbol library is currently opened.

The **Close** button is used to close a symbol library.

The **Save** button is used to save changes to the symbol library.

The **Print** button is used to print the symbol library.

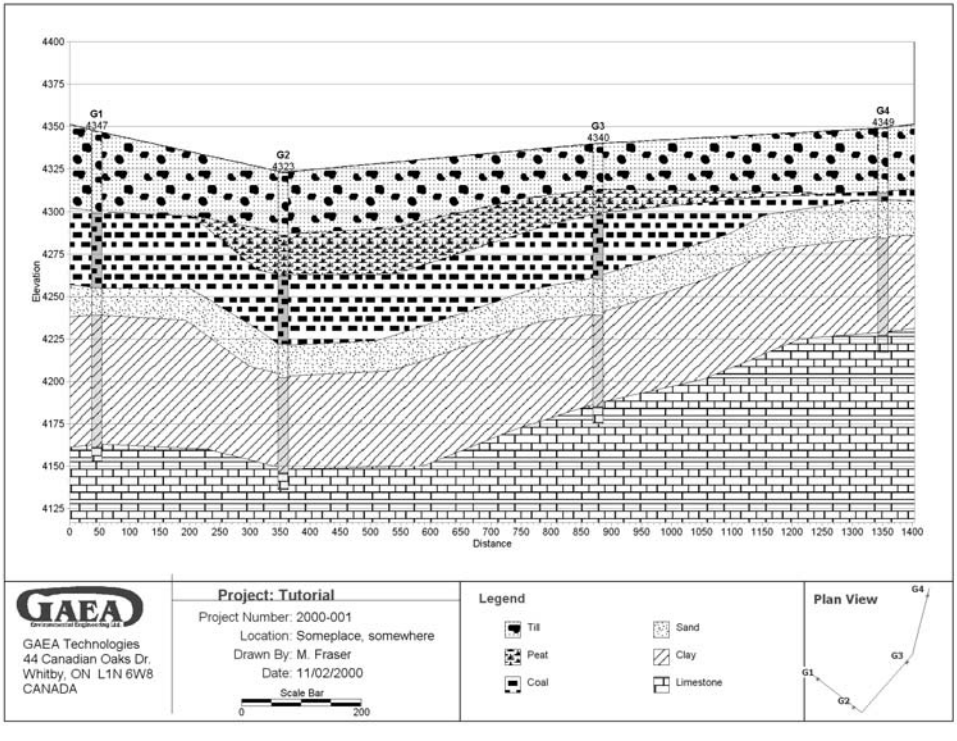
Desktop

The desktop is used to display numerous child windows. These child windows can contain cross-sections, templates, and symbol libraries. The data is displayed graphically and you can add new data or edit existing data by clicking on the data in the window.

Each child window has the standard Windows icons for minimizing, maximizing, and closing the window. When a child window is minimized an icon for the window will be displayed at the bottom of the desktop. The display of the child windows can also be adjusted using the Window command on the menu bar.

2.

Tutorial


G1
4347
G2
4323
G3
4340
G4
4349
Elevation
Distance
GAEA
GAEA Technologies
44 Canadian Oaks Dr.
Whitby, ON L1N 6W8
CANADA
Project: Tutorial
Project Number: 2000-001
Location: Someplace, somewhere
Drawn By: M. Fraser
Date: 11/02/2000
Scale Bar
0
200
Legend
Till
Sand
Peat
Clay
Coal
Limestone
Plan View
G1
G2
G3
G4

Tutorial 2.

Cross-sections are used to depict the vertical structure and stratigraphy of the subsurface. Typically cross-sections intersect several boreholes that may or may not be along a straight line. The stratigraphic information from the boreholes is combined with other knowledge of the area to generate the cross-section.

WinFence can be used to graphically create detailed, full-color, cross-sections and fence diagrams quickly and easily. The program can be used to interpret and map soil and rock layers, contamination, fossils, minerals and hydrocarbons.

A wide variety of strata can be used to create cross-sections in WinFence. Types of strata that can be used include layers, faults, lenses, intrusions, and alteration zones. Very detailed and complicated stratigraphy can be represented and easily drawn. Layers can contain multiple segments to represent uncomformities and erosion in highly faulted zones.

Before using the WinFence program it is recommended that the tutorial in this chapter be completed. This tutorial will give you a basic understanding of how to use the WinFence program. It describes how to select a project, enter the cross-section data, and print the cross-section.

It is recommended that while you read this tutorial you perform the actual procedures discussed using the WinFence program. The program includes the “WinFence Tutorial” project and template that are referred to in this chapter.

This tutorial describes how to:

1. Select a project
2. Create a new cross-section
3. Enter the title bar data
4. Edit the strata
5. Save the cross-section
6. Print the cross-section
7. Display the Fence Diagram

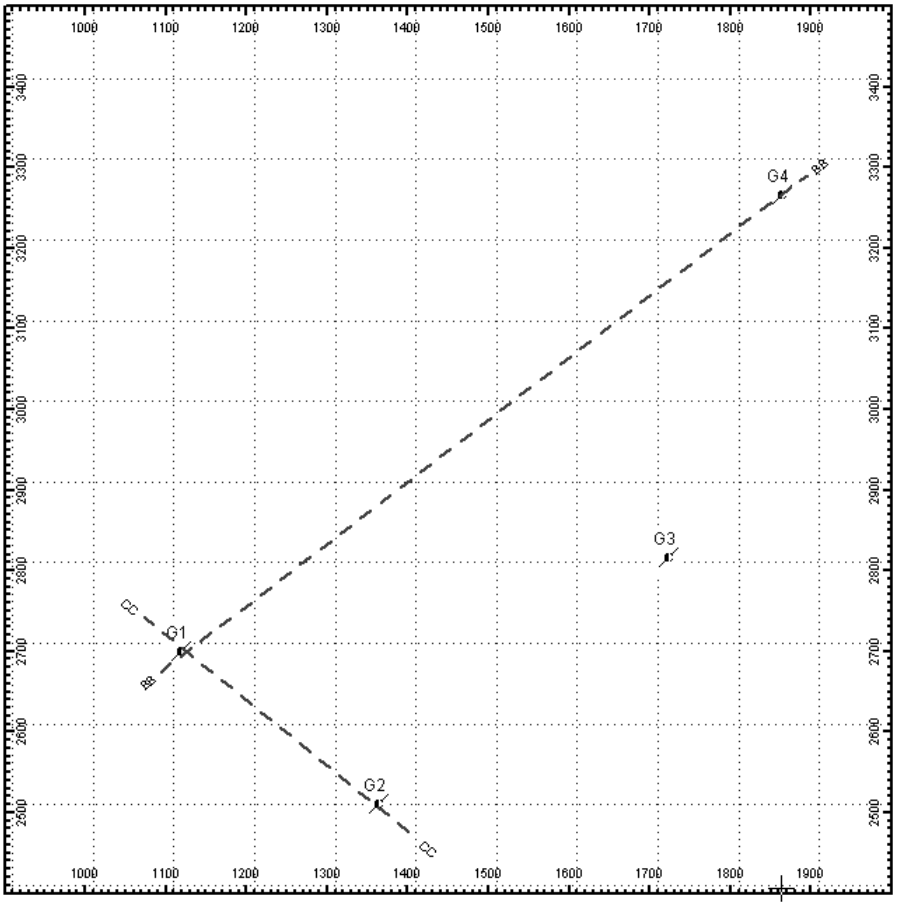
Each of these steps is discussed in detail below. Detailed instructions on entering and editing cross-section data are provided in Chapter 4.

Selecting a Project

Since the WinFence program uses borehole logs created in WinLoG to create cross-sections, a previously created project will be used for this tutorial. This project was created in WinLoG and has four borehole logs.

To select the project click on the Open Project button on the Project toolbar or select the Open Project menu item from the File menu. When the program is initially started you can also select the Open Project button on the Startup form. The Open Project form will then be displayed. The Open Project form will display a list of available projects. Select the **WinFence Tutorial** project and then press the OK button.

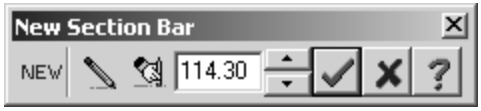
The project location map for the WinFence Tutorial project will then be displayed as shown on the next page. This project has two previously completed cross-sections, BB and CC. In this tutorial we are going to create a third cross-section, AA.



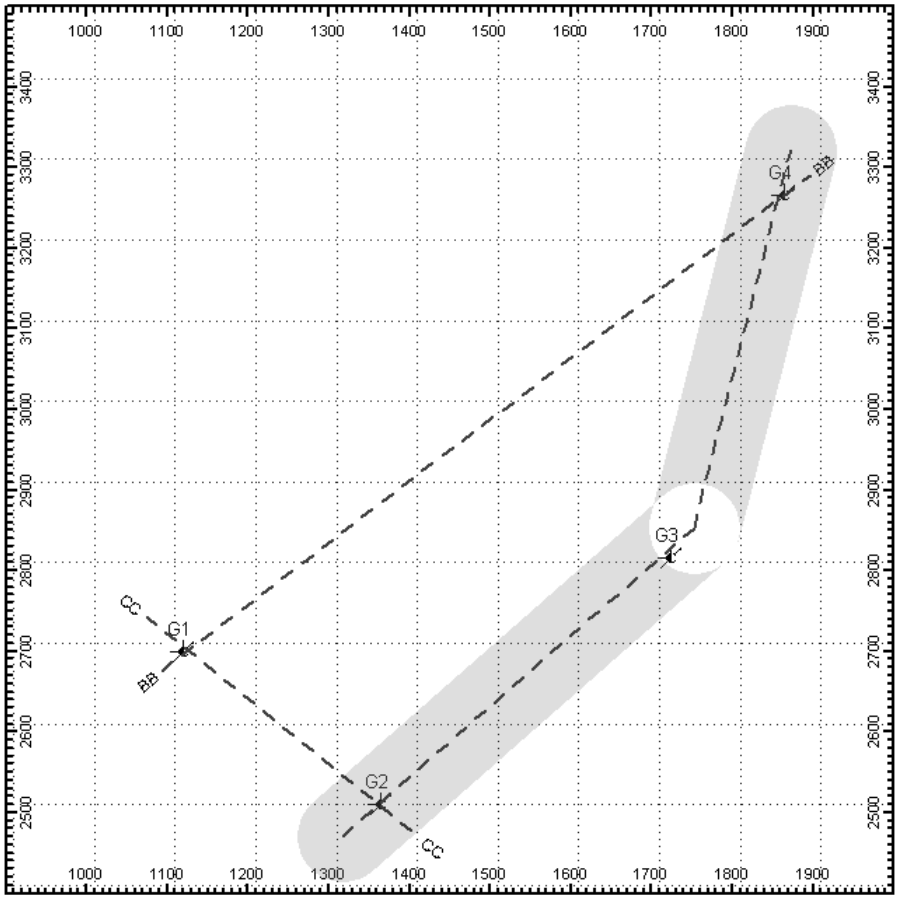
Creating a New Cross Section

There are two steps to creating a new cross-section. First the pathline of the cross-section needs to be specified and then a template needs to be selected. The pathline is the imaginary line that the cross-section follows through the boreholes in the project. This line can be either straight or bent.

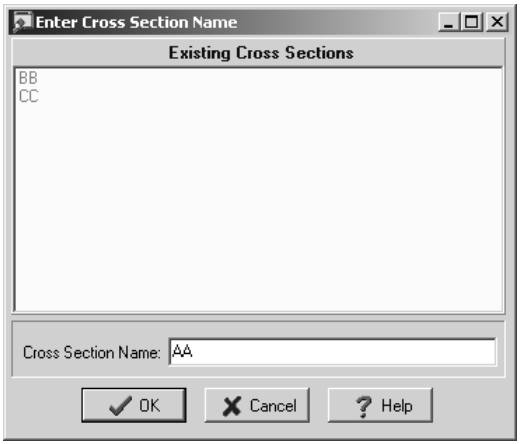
To create a new cross-section, click on the New button on the Location or Cross Section toolbars or by selecting the New Cross Section menu item from the File menu. The New Section Toolbar shown on the next page will be displayed.



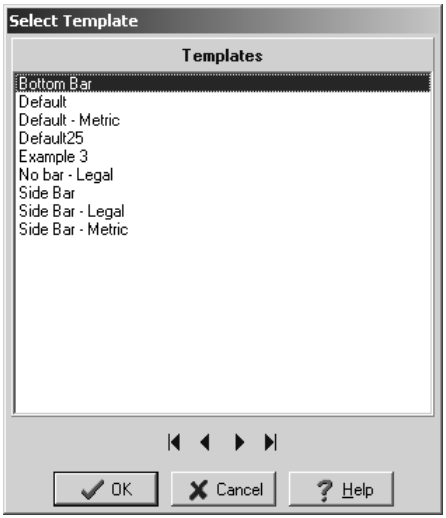
To begin drawing the pathline of the new cross-section, click the Line button on the New Section toolbar. The cursor will then change to a “cross-hair”. Click on the location of the starting point of the cross-section and then click on each point of the pathline. Only the points where the pathline bends need to be clicked. At the last point on the path line double-click the left-mouse button. The pathline will be highlighted in green, as shown below. All of the wells within the pathline area will be used in the cross-section.



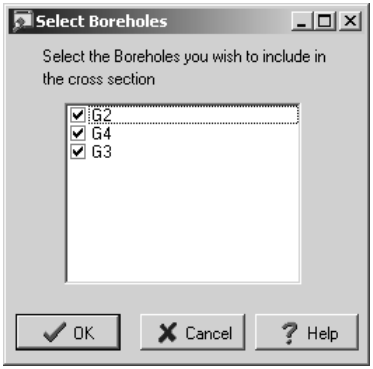
To create the cross-section along the selected path, click on the Ok button on the New Section toolbar. The Enter Cross-section Name form, shown below, will be displayed. Enter a unique name for the new cross-section and then press the Ok button.



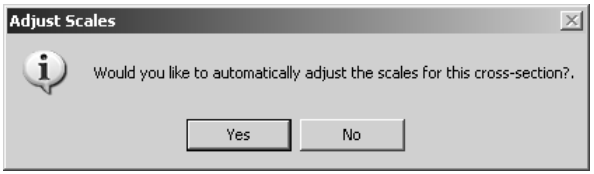
Before the cross-section can be displayed a template must be selected, the Select Template form below will be displayed after you specify the name of the cross-section. Select the "Bottom Bar" template for this tutorial and then press the Ok button. For a detailed description of templates see Chapter 6.



The Select Boreholes form on the next page will then be displayed, showing which boreholes will be included in the cross-section. This form can be used to remove boreholes from the cross-section. In this example, we will include all three selected boreholes.



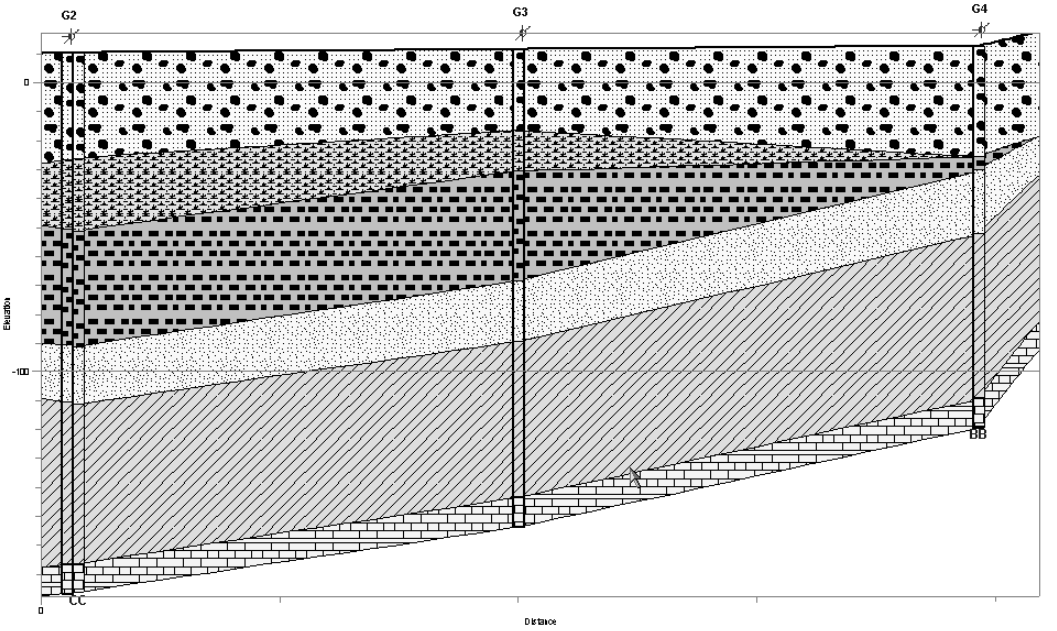
When creating the cross-section the program will try to fit the length of the path-line within the horizontal length and scale specified in the template. If the path of the cross-section is too large the form below will be displayed. You can select either to have the scales adjusted or to have the cross-section cropped at the page boundaries. For this tutorial select Yes to adjust the scales.



In version 2 there is the option to have the program automatically generate the cross-section. This is done using artificial intelligence (AI) built-into the program. When determining how to connect the strata between boreholes, wells, and intersecting cross-sections the program looks at the similarities in the lithologies, thicknesses, and occurrence of the strata. This methodology works well with most geologies; except, where the geology is very complicated or there are faults. In addition, the program's AI will not be able to determine alteration zones. However, these zones can be added and the strata can be edited after the cross-section has been generated.

In this tutorial, we will use the auto-generated strata and then edit some of the strata. The cross-section with the auto-generated strata is shown on the next page. For a detailed description on how to add new strata and edit strata see Chapter 4.

The three boreholes that were included in the cross-section are displayed at the top of the section, and the two intersecting cross-sections (BB and CC) are displayed at the bottom of the section.

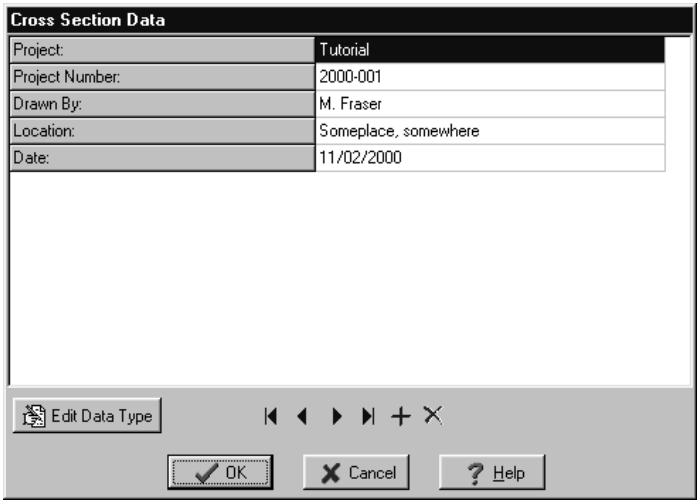


Entering Title Bar Data

The title bar is used to display general information about the cross-section. This can include information such as project name and number, location, date, etc. There is no limit to the number of data items that can be displayed. New and edited data (up to 255 characters) can be entered on the input lines to the right of the data type.

The types of data and their positions in the title bar are controlled by the template. Chapter 6 contains a detailed description on how to modify the title bar.

To edit the Title Bar either click on the title bar or select the Title Bar menu item from the Edit or Cross Section Popup menus. The Cross Section Data form on the next page will be displayed. Enter the data shown below on the input lines and then press the Ok button. The title bar on the cross-section will then be updated with the data.



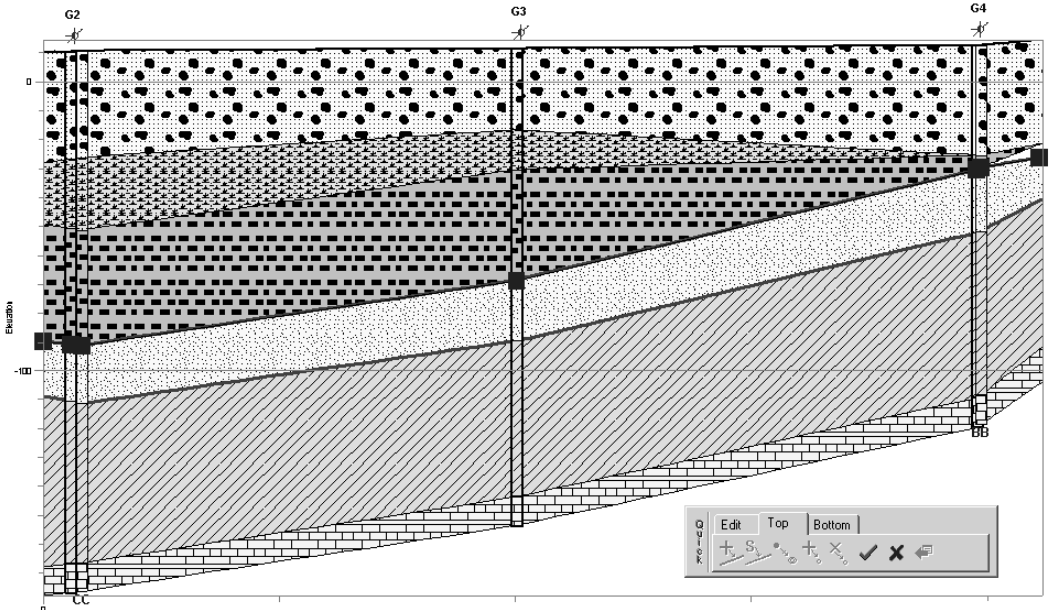
Entering Strata

In this tutorial, we have used the auto-generated strata. These strata can be easily edited to your requirements. In this example, we will edit the sand.

Editing the Sand

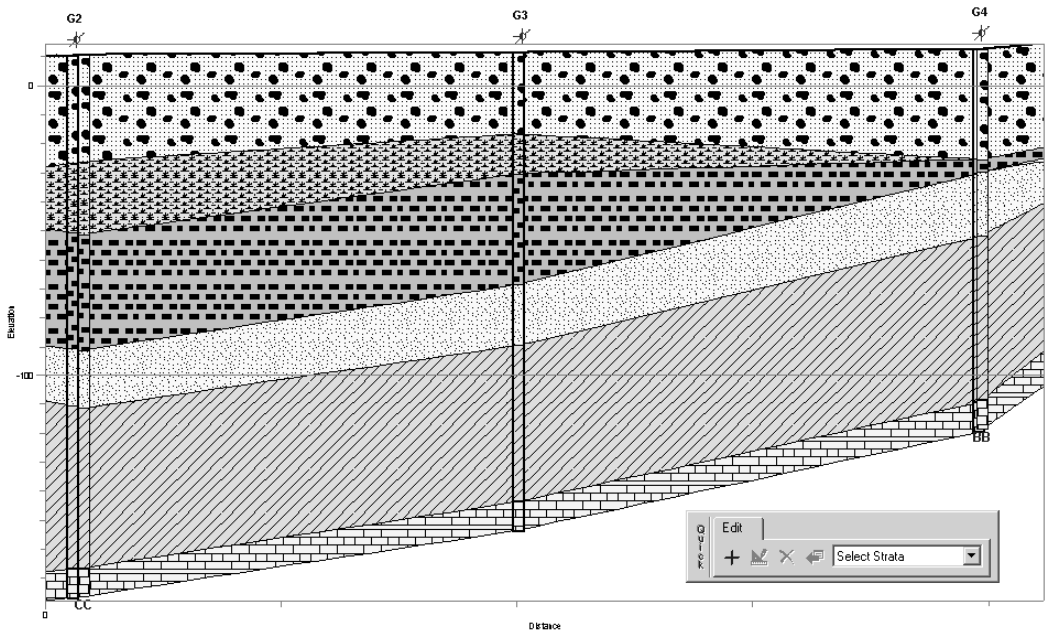
To edit the top boundary of the sand, select the Sand strata on the Quick tool-bar. The top and bottom boundaries of the sand will then be highlighted in red.

Then to edit the points on the top boundary, click the Edit Points button on the Top tab of the Quick toolbar. The points used to define the top boundary of the sand will be highlighted with blue boxes. There will be one point for each borehole and intersecting cross-section and at the beginning and end of the layer. Select the last point on the right and move it down a bit to make room for a thicker coal. The cross-section should then look as shown below.



To finish editing the sand click on the Ok button and then on the Finish Editing button.

Next select the coal strata on the Quick toolbar. Then click on the Edit Points button on the bottom tab. Select the last point on the right of the coal and shift the point down to meet the top of the sand. After the point has been moved click on the Ok and Finish Editing buttons on the Quick toolbar. The cross-section should then look as shown on the next page.



Saving the Cross Section

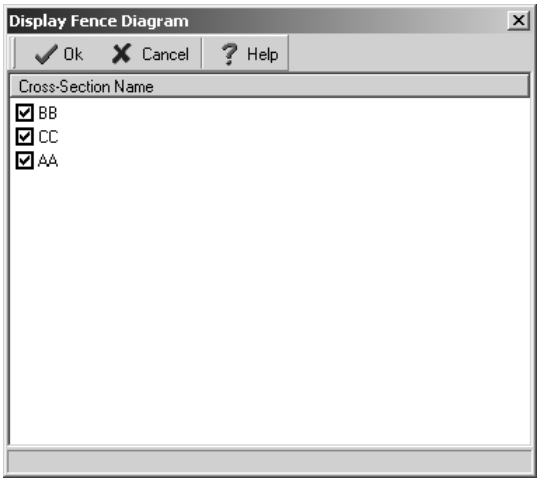
To save the cross-section either select the Save menu item from the Cross Section popup menu or click on the Save button on the Cross Section toolbar.

Printing the Cross Section

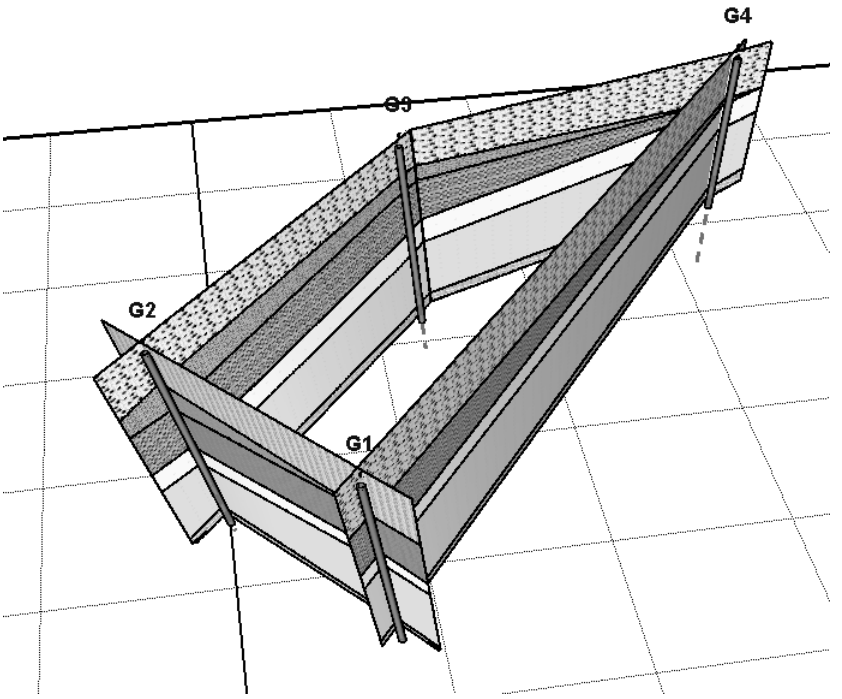
To print the cross-section select the Print menu item from the File menu or click the Print button on the Cross Section toolbar.

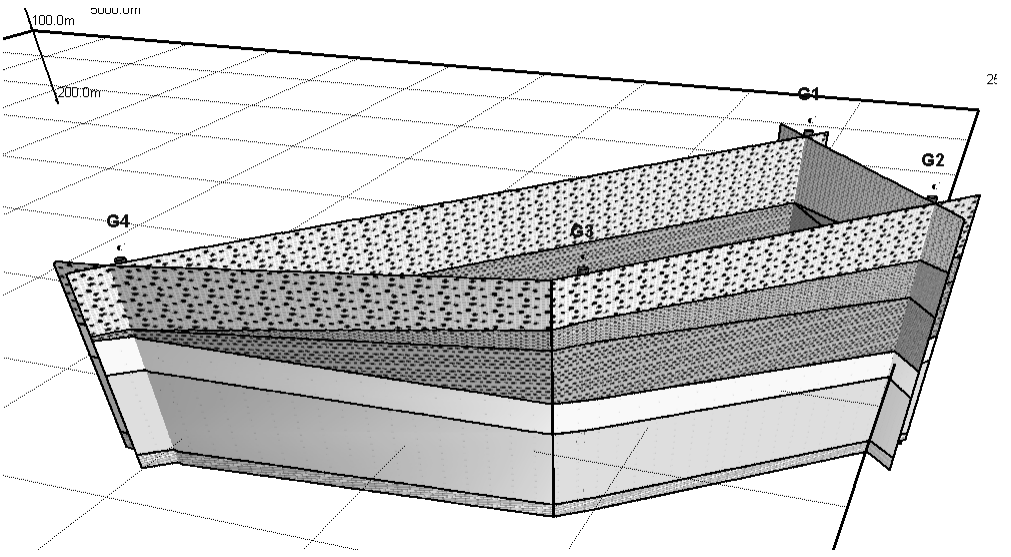
Displaying the Fence Diagram

To display the fence diagram showing the three cross-sections in the project click on the Display Fence Diagram button on the Fence Diagram (DFD) toolbar. The Display Fence Diagram form below will be displayed showing which cross-sections will be included in the fence diagram.

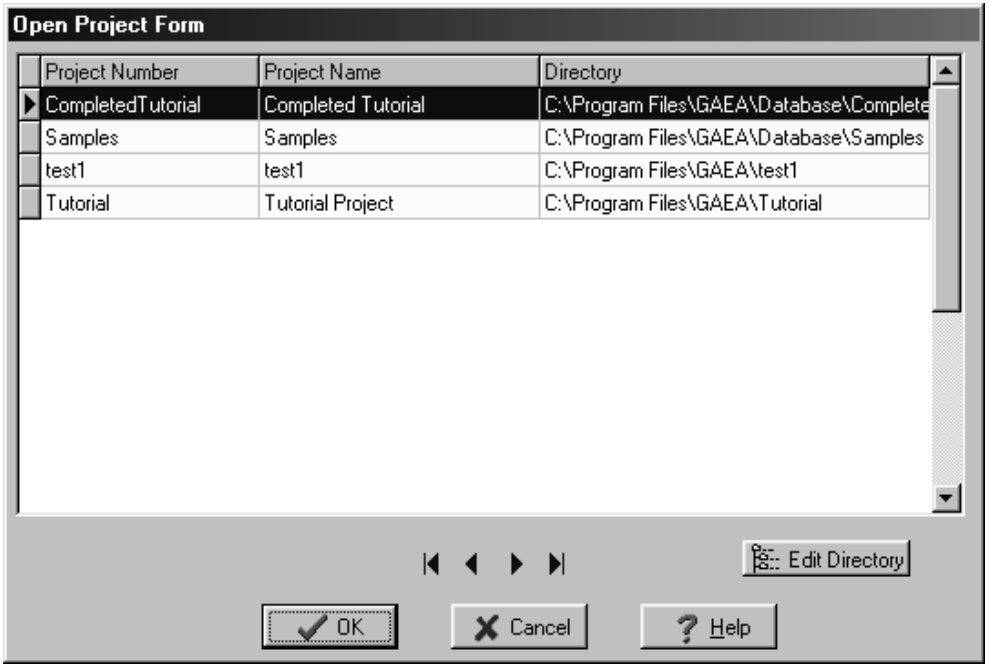


In this example we will include all 3 cross-sections. Click on the Ok button to display the fence diagram. The fence diagram can then be manipulated as shown on the next page using the scene map. See Chapter 5 for a detailed description on how to manipulate fence diagrams.


G4
G3
G2
G1


100.0m
200.0m
G4
G3
G2
G1

3. Projects


Open Project Form
Project Number
Project Name
Directory
CompletedTutorial
Completed Tutorial
C:\Program Files\GAEA\Database\Complete
Samples
Samples
C:\Program Files\GAEA\Database\Samples
test1
test1
C:\Program Files\GAEA\test1
Tutorial
Tutorial Project
C:\Program Files\GAEA\Tutorial
Edit Directory
OK
Cancel
Help

3. Projects

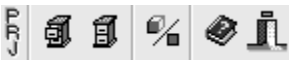
As discussed in the introduction, the WinFence program is based upon the project concept for data storage. Using this method, a separate Microsoft Access 2000 database is used to store each project for each application. Each project is stored in a separate directory, which can be on the same computer or spread across a network. The number of databases for each project will depend upon the applications being used for that project. If for example, the WinLoG and WinFence programs are being used with the project, there will be two project databases.

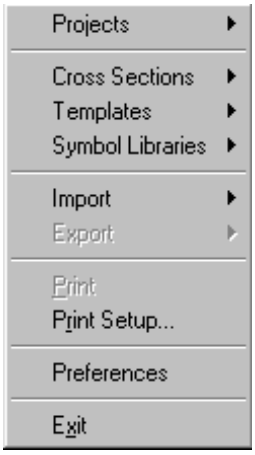
The names of the project databases are the project name combined with the application name. For example, if the project name is "980205" then the project database name for WinFence would be "980205winfence.mdb". Typically, this project would be stored in the subdirectory "\980205".

This chapter describes how to:

1. Open an existing project
2. Open the last project
3. Use the GIS Interface
4. Close a project
5. Delete a project
6. Import data
7. Export data
8. Manage a project database
9. Backup all data
10. Set project passwords
11. Set program preferences

These tasks can be performed using menu commands on the File menu or buttons on the Project toolbar, shown below.





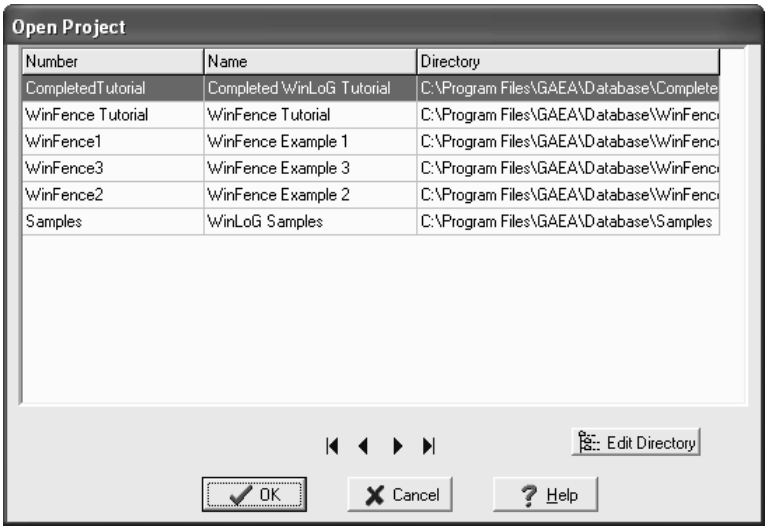
Opening an Existing Project

The WinFence program works in conjunction with the WinLoG program to create cross-sections and fence diagrams using borehole data that has been previously entered in WinLoG. All projects must first be created in WinLoG before they can be used in WinFence.

To work with an existing project you can open it by selecting the Open Project menu item of the Projects submenu or clicking the Open button on the Project Toolbar. In addition, at the start of the program the Open an Existing Project button can be selected on the Startup Form. A list of available projects will be displayed in the Open Project Form as shown on the next page. The desired project can be selected by clicking on it in the list and then pressing the OK button.

The directory that a project is stored in can be changed by clicking on the Edit Directory button. This will display a Select Directory form that can be used to select the new directory for the project. Changing the directory will not move any of the project files. The purpose of this option is to allow for the movement of projects on a network.

The arrow buttons at the bottom of the list can be used to move the selection to the start of the list, the previous record, the next record, or the end of the list.



Opening the Last Project

At the start of the program, the last opened project can be selected by selecting the Open Last Project button on the Startup Form. The program automatically stores the last project used.

Using the GIS Interface

Projects are now displayed using a geographic information system (GIS). The GIS displays a project location map that can be used to display and edit boreholes or wells (if WinLoG has been installed), cross-sections.and fence diagrams. In addition, site features and AutoCAD files can also be displayed. The project location map can also be printed to be included with the boring logs.

Editing a Borehole

To edit a borehole or well in the project, just double-click on it on the location map. If you have WinLoG installed, the selected borehole or well will be displayed in WinLoG.

Adding a Cross-Section

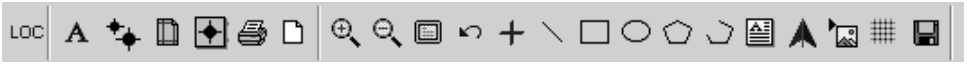
To add a new cross-section to the project click on the New button on either the Section (SEC) or Location Map (LOC) toolbars. The New Cross-Section (NEW) toolbar will be displayed. See Chapter 4 for how to use this toolbar to create a new cross-section.

Editing a Cross-Section

To edit a cross-section in the project, just double-click on it on the location map. The selected cross-section will then be displayed.

Location Map Toolbar

The display and editing of the project location map is controlled using the LOC toolbar on the right side of the map. This toolbar has several buttons which are described in the following sections.

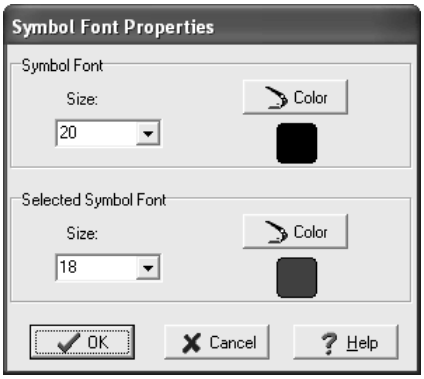


A Label Font Button

The Font button is used to specify the font to use for the borehole/well labels. When this button is pressed a Font form is displayed. This form can be used to select the type face, style, size, and color of the font.

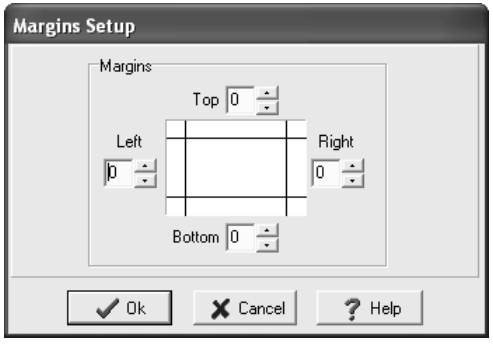
Symbol Size Button

The Symbol Size button is used to set the symbol size and color of the boreholes/wells on the location map. When this button is pressed the Symbol Font Properties form below will be displayed. This form can be used to select the size and color of selected and unselected wells/bore holes. Selected wells/boreholes are those that intersect the pathline.



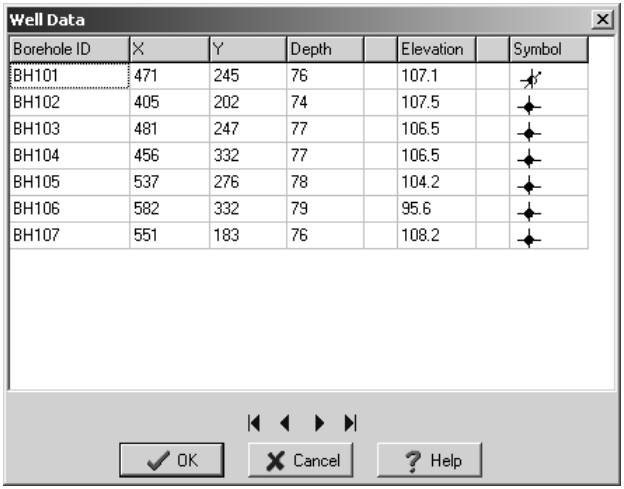
Page Margins Button

The Margins button is used to set the margins of the location map. All the wells/boreholes positions will be scaled to fit within the boundaries of these margins on the location map. When this button is pressed a Margins Setup form will be displayed. This form can be used to specify the left, right, top, and bottom margins.



Well Data Button

The Well Data button is used to enter and edit the locations and symbols of the boreholes/wells on the location map. When this button is pressed the Well Data form below will be displayed.



The following information can be entered for each of the wells/boreholes in the list:

Borehole ID: This is the name or ID of the borehole or well. The Borehole ID is used to retrieve data from the WinLoG database. Care should be taken when editing these IDs, if they do not match up with the IDs in the WinLoG database no data will be retrieved for the borehole/well.

X: This is the horizontal or x coordinate of the well relative to whatever reference grid is being used for the project. The x coordinate can be in any units as long as the same units are used throughout the project.

Y: This is the vertical or y coordinate of the well relative to whatever reference grid is being used for the project.

Depth: This is the depth of the well/borehole. The depth is used to draw the borehole on the cross-section and to scale the borehole data on the cross-section. The depth should be in the same units as those used for the vertical axis of the cross-section.

Elevation: This is the elevation of the well/borehole. The elevation is used to position the borehole vertically on the cross-section. The elevation should be in the same units as the depth.

Symbol: This is the symbol to use when plotting the well/borehole on the location map. When this field is clicked, a Symbol button will appear. To edit the symbol press the Symbol button and the Well Symbols form will be displayed. Select the desired symbol and then press the Ok button.

Print Button

The Print Location Map Button allows the user to print the project location map. Clicking the button opens up a standard print dialog that allows the user to select the print range and the number of copies. More advanced print properties can be set by clicking print properties on the "Properties" button. Most printers allow you to change things such as the Print Quality, Paper Type , Paper Size, Paper Orientation, Paper Color, etc.

New Cross-Section Button

To add a new cross-section to the project click on the New button on either the Section (SEC) or Location Map (LOC) toolbars. The New Cross-Section (NEW) toolbar will be displayed. See Chapter 4 for how to use this toolbar to create a new cross-section.

Zoom In Button

The Zoom In button allows the user to zoom in the field of view to a specific area. To zoom into a specific area all the user needs to do is click on the Zoom-In button on the toolbar. Next using the left mouse button click on the location of the upper left corner of the desired viewing area. Then while holding the left mouse button down drag the mouse to the location of the lower right corner of the viewing area. Then release the mouse button. Once the mouse button is released the new viewing area is shown.

Zoom Out Button

The Zoom Out button allows the user to zoom out from the users field of view by 50% each time the button is clicked.

Zoom Full Button

The Zoom Full button adjusts the location map view to the grid coordinates that are set in the Location Map setup. Just click once to view the full map size.

Undo Button

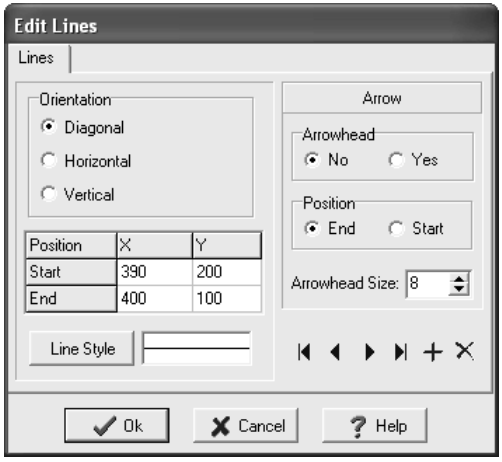
The Undo button will undo the previous operation on the location map.

Add Borehole/Well Button

The Add Borehole Button will add a new borehole or well. To add a borehole or well click on the button and then on the location on the map. The new borehole/well will then be created using WinLoG.

Line Button

The Line button allows the user to place a line anywhere on the location map. To draw a line, click on the Line button then click and hold down the left mouse button at the first point of the line and drag the cursor across the screen to the end point of the line. When the user is satisfied that they have the cursor over the appropriate end point they should release the mouse button. Once this is done, the program will open the Edit Line form below. The user can then decide the orientation of the line, the line style, and they can tweak the start and end positions if they desire.



The user can also add an arrow to the line at either the Start or End position, with the arrowhead size of their choice.

The following can be edited from this form:

Start X: This is the horizontal position of the start of the line in real grid coordinates either feet or meters. If the Line button on the toolbar is used to create the line, the program will fill in the position, otherwise the user will have to enter in the position.

Start Y: This is the vertical position of the start of the line in real grid coordinates either feet or meters. If the Line button on the toolbar is used to create the line, the program will fill in the position, otherwise the user will have to enter in the position.

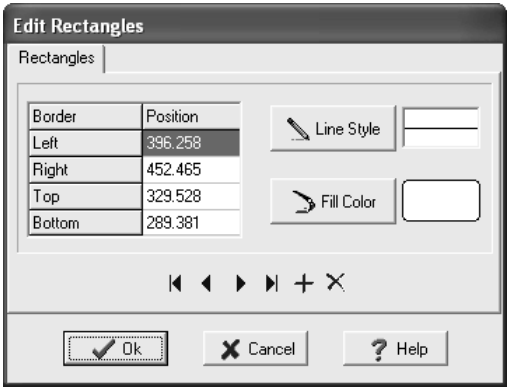
End X: This is the horizontal position of the end of the line in real grid coordinates either feet or meters. If the Line button on the toolbar is used to create the line, the program will fill in the position, otherwise the user will have to enter in the position.

End Y: This is the vertical position of the end of the line in real grid coordinates either feet or meters. If the Line button on the toolbar is used to create the line, the program will fill in the position, otherwise the user will have to enter in the position.

Line Style: Clicking the Line Style button opens a Line properties form on which the user can select the Line Style (Solid, Dashed, Dash Dot, etc), thickness and color of the line.

Rectangle Button

The Rectangle button allows the user to place a rectangle anywhere on the location map. To draw a rectangle click on the Rectangle button, then click and hold down the left mouse button at the upper left hand corner of the rectangle and drag the cursor across the screen to the bottom right hand corner of the rectangle. After the mouse button is released the Edit Rectangles form below.



The following can be edited from this form:

Left: This is the position of the left border of the rectangle in real grid coordinates either feet or meters. If the Rectangle button on the toolbar is used to create the rectangle, the program will fill in the position, otherwise the user will have to enter in the position.

Right: This is the position of the right border of the rectangle in real grid coordinates either feet or meters. If the Rectangle button on the toolbar is used to create the rectangle the position will be filled in by the program, otherwise the user will have to enter in the position.

Top: This is the position of the top border of the rectangle in real grid coordinates either feet or meters. If the Rectangle button on the toolbar is used to create the rectangle the position will be filled in by the program, otherwise the user will have to enter in the position.

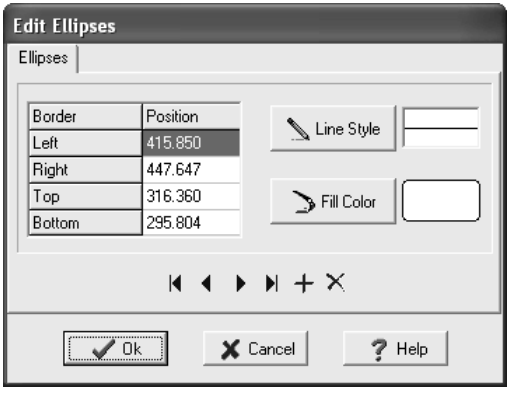
Bottom: This is the position of the bottom border of the rectangle in real grid coordinates either feet or meters. If the rectangle button on the toolbar is used to create the rectangle the position will be filled in by the program, otherwise the user will have to enter in the position.

Line Style: Clicking the Line Style button opens a Line properties form on which the user can user select the Line Style (Solid, Dashed, Dash Dot, etc) thickness and color of the line.

Fill Color: Clicking the Fill Color button open up the Color form from which the user can select the color they wish to have on the interior of the rectangle.

Ellipse Button

The Ellipse button allows the user to place an ellipse anywhere on the location map. To draw an ellipse click on the Ellipse button then click and hold down the left mouse button at the upper left hand corner of the ellipse and drag the cursor across the screen to the bottom right hand corner of the ellipse. Once this is done, the program will open the Edit Ellipse form below.



The following can be edited on this form:

Left: This is the position of the left border of the ellipse in real grid coordinates either feet or meters. If the Ellipse button on the toolbar is used to create the ellipse the position will be filled in by the program, otherwise the user will have to enter in the position.

Right: This is the position of the right border of the ellipse in real grid coordinates either feet or meters. If the Ellipse button on the toolbar is used to create the ellipse the position will be filled in by the program, otherwise the user will have to enter in the position.

Top: This is the position of the top border of the ellipse in real grid coordinates either feet or meters. If the Ellipse button on the toolbar is used to create the ellipse the position will be filled in by the program, otherwise the user will have to enter in the position.

Bottom: This is the position of the bottom border of the ellipse in real grid coordinates either feet or meters. If the Ellipse button on the toolbar is used to create the ellipse the position will be filled in by the program, otherwise the user will have to enter in the position.

Line Style: Clicking the Line Style button opens a Line properties form on which the user can user select the Line Style(Solid, Dashed, Dash Dot, etc), thickness and color of the line.

Fill Color: Clicking the Fill Color button open up the color form from which the user can select the color they wish to have on the interior of the ellipse.

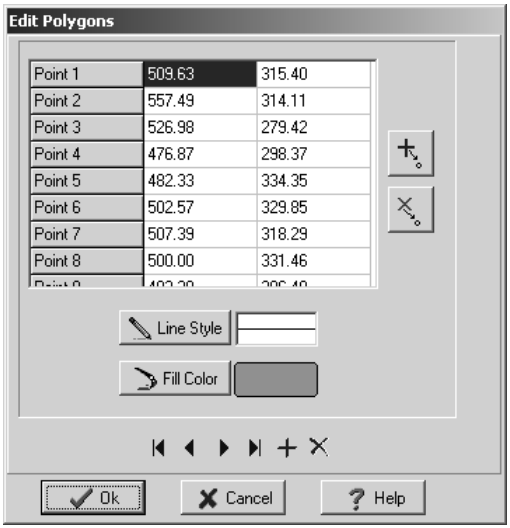
Polygon Button

The Polygon button allows the user to place a polygon anywhere on the location map. To draw a polygon, click on the Polygon tool button then click the left mouse button at the first point of the polygon. Move the cursor to the second point of the polygon then left click there as well. The user can continue to add points to their polygon until all points have been added. Then to finish the polygon simply click the right mouse button. Once this is done, the program will open the Edit Polygons form on the next page.

The following can be edited on this form:

Point Coordinates: All point coordinates are in true grid coordinates, 1283 N, 284 E is 1283, 284 in meters or feet. Points can be added or deleted using the Add and Delete buttons on the right side of the coordinates.

Line Style: Clicking the Line Style button opens a Line Properties form on which the user can user select the Line Style(Solid, Dashed, Dash Dot, etc), thickness and color of the line.



Fill Style: Clicking the Fill Style button opens a Color form on which the user can user select the color of the polygon.

Polyline Button

The Polyline button allows the user to place a polyline anywhere on the location map. To draw a polyline, click on the polyline tool button then click the left mouse button at the first point of the polyline. Move the cursor to the second point of the polyline then left click there as well. The user can continue to add points to their polyline until all points have been added. Then to finish the polyline simply click the right mouse button. Once this is done, the program will open the Edit Polyglines form on the next page.

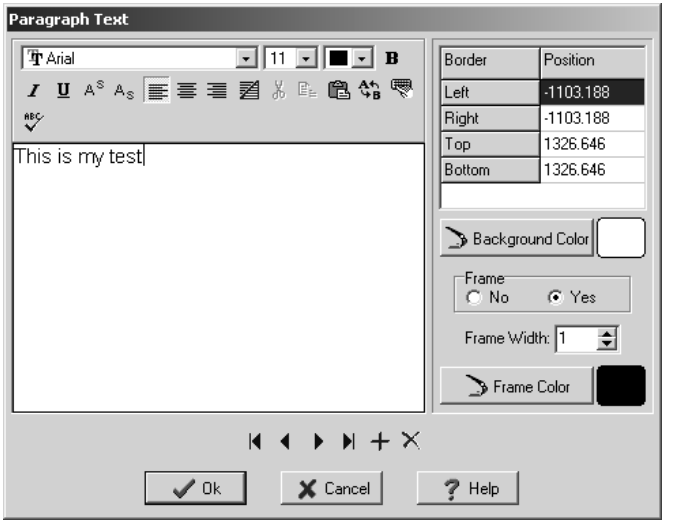
The following can be edited on this form:

Point Coordinates: All point coordinates are in true grid coordinates, 1283 N, 284 E is 1283, 284 in meters or feet. Points can be added or deleted using the Add and Delete buttons on the right side of the coordinates.

Line Style: Clicking the Line Style button opens a Line Properties form on which the user can user select the Line Style(Solid, Dashed, Dash Dot, etc), thickness and color of the line.

Paragraph Button

To add a Paragraph Text box to the location map click on the Paragraph button on the Toolbar. Next using the left mouse button click on the location of the upper left corner if the paragraph textbox. Then while holding the left mouse button down drag the mouse to the location of the lower right corner. After the button has been released, the Paragraph Text form will be displayed.



The following information can be entered and edited using this form:

Text: This is the text for the paragraph. There is no limit to the length of the text. The Rich Text toolbar at the top of the form is used to format the text. This toolbar is described at the bottom of this section.

Left: This is the position of the left border of the paragraph in real grid coordinates either feet or meters. If the Paragraph button on the toolbar is used to create the paragraph, the program will fill in this position. The units of measurement are specified in the location map grid settings.

Right: This is the position of the right border of the paragraph in real grid coordinates either feet or meters. If the Paragraph button on the toolbar is used to create the paragraph, the program will fill in this position. The units of measurement are specified in the location map grid settings.

Top: This is the position of the top border of the paragraph in real grid coordinates either feet or meters. If the Paragraph button on the toolbar is used to create the paragraph, the program will fill in this position. The units of measurement are specified in the location map grid settings.

Bottom: This is the position of the bottom border of the paragraph in real grid coordinates either feet or meters. If the Paragraph button on the toolbar is used to create the paragraph, the program will fill in this position. The units of measurement are specified in the location map grid settings.

Background Color: This is the background color of the paragraph text box. When the Background color button is pressed, a Color form is displayed. Using this form, a basic color can be selected or a custom color can be specified.

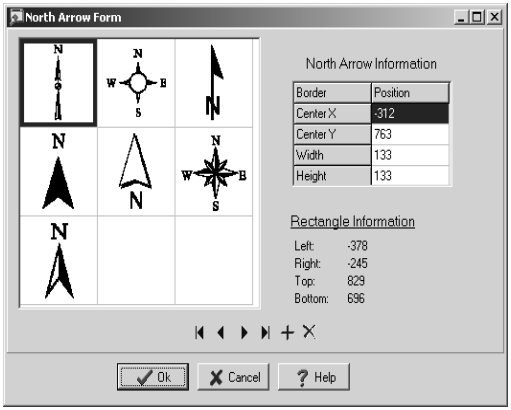
Frame: Select yes to display a frame around the paragraph text.

Frame Width: This is the line width of the frame around the paragraph text. If no frame is selected above, this field will not be displayed.

Frame Color: This is the color of the frame to display around the paragraph text. When the Frame Color button is pressed a Color form is displayed. Using this form, a basic color can be selected or a custom color can be specified. If no frame is selected above, this field will not be displayed.

North Arrow Button

The North Arrow Button allows the user to place a north arrow anywhere on the location map. To use the North Arrow button, click on the button and then click on the location where you would like the north arrow to appear. Once you have clicked on the location map and released the mouse button the North Arrow form on the next page will be displayed.



The following can be edited from this form:

Center X: This is the horizontal position of the center of the north arrow in real grid coordinates either feet or meters. If the North Arrow button on the toolbar is used to create the north arrow, the program will fill in the position, otherwise the user will have to enter in the position.

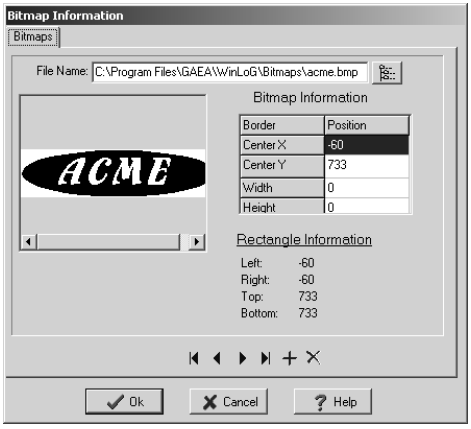
Center Y: This is the vertical position of the center of the north arrow in real grid coordinates either feet or meters. If the North Arrow button on the toolbar is used to create the north arrow, the program will fill in the position, otherwise the user will have to enter in the position.

Width: This is the width of the north arrow in real grid coordinates either feet or meters. If the North Arrow button on the toolbar is used to create the north arrow, the program will fill in the position, otherwise the user will have to enter in the position

Height: This is the height of the north arrow in real grid coordinates either feet or meters. If the North Arrow button on the toolbar is used to create the north arrow, the program will fill in the position, otherwise the user will have to enter in the position

Bitmap Button

To add a bitmap, click on the Bitmap button on the toolbar. Next using the left mouse button click on the location of the center of the bitmap. The Open Bitmap File form will then be displayed., select the bitmap file and then press the Open button. The Bitmap Information form on the next page will then be displayed.



The following can be edited from this form:

File Name: This is the name of the bitmap file to display on the location map. To change the name of the file, edit this name or click on the button to the right of the name. If the button to the right is pressed, an Open bitmap file form will be displayed.

Center X: This is the horizontal position of the center of the bitmap in real grid coordinates either feet or meters. If the Bitmap button on the toolbar is used to create the bitmap the program will fill in the position, otherwise the user will have to enter in the position.

Center Y: This is the vertical position of the center of the Bitmap in real grid coordinates either feet or meters. If the Bitmap button on the toolbar is used to create the Bitmap, the program will fill in the position, otherwise the user will have to enter in the position.

Width: This is the width of the bitmap in real grid coordinates either feet or meters. If the Bitmap button on the toolbar is used to create the bitmap , the program will fill in the position, otherwise the user will have to enter in the position.

Height: This is the height of the bitmap in real grid coordinates either feet or meters. If the Bitmap button on the toolbar is used to create the Bitmap, the program will fill in the position, otherwise the user will have to enter in the position.

Location Map Setup Button

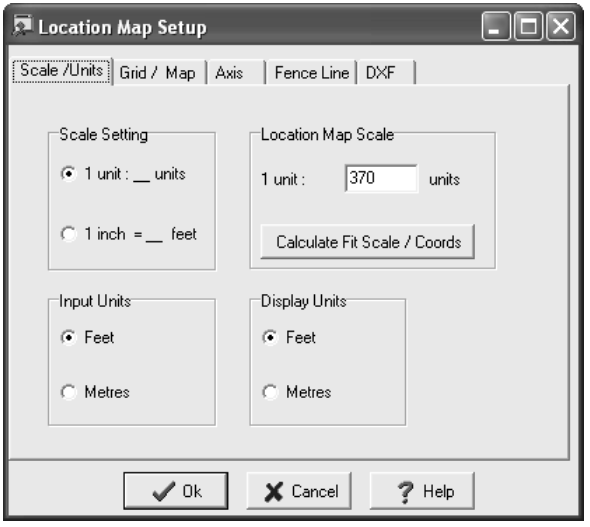
The Location Map setup button allows the user access to the setup preferences of the location map. Clicking on the button opens up the Location Map Preferences Form. There are five tabs on this form:

- Scale / Units tab
- Grid / Map tab
- Axis tab
- Fence Line tab
- DXF tab

Scale / Units Tab

The Scale / Units tab shown below controls the scale type, scale, input units, and display units of the location map.

What is a map scale?
To make a map useful, mapmakers establish and indicate a consistent relationship between size on the map and size in real life. This relationship is the map scale. For instance, a map may use one inch to represent what is actually 24,000 inches on earth. Mapmakers express scale as a mathematical ratio, or fraction. The unit on the map is expressed as the number one (numerator). A scale of 1:24,000 would be read as "one to twenty-four thousand." We cannot easily visualize a value such as 24,000 inches, so maps usually not only show the scale ratio but convert the ratio to units of measurement. For example, a 1:24,000 map can also be expressed as 1 inch = 2000 feet, or about four-tenths of a mile.



When choosing a map, consider whether a small scale or large scale suits your purposes better. A large-scale map shows a small land area in great detail. A small-scale map shows less detail, but a larger land area.

The following information can be entered and edited using this tab:

Scale Setting: This radio button allows the user to change the scale setting to either a dimension-less ratio or to a given distance in metres.

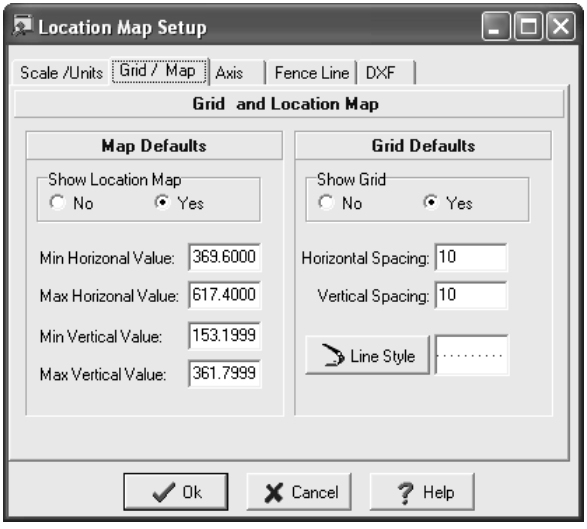
Location Map Scale: This text box allows the user to enter the scale they wish to have the location map drawn at. If the scale setting is at 1 unit: 50 units then for example 1 metre on the print out is equal to 50 metres in the real world. If the scale is 1inch = 25 feet then 1 screen inch is equal to (12 * 25) = 300 inches in the real world.

Input Units: Input units are the units that are stored in the database and that locations one the screen are stored in.

Display Units: Display units are the units that are displayed on the screen. For example, the input units from the database can be in metres but the display units maybe feet.

Grid / Map Tab

The Grid / Map Tab shown below sets the Grid and Map defaults for the project location map.



The following information can be entered and edited using this tab:

Show Location Map: This radio button allows the user to turn the location map on or off.
Min Horizontal Value: This is the position of the left border of the location map in real grid coordinates of either feet or meters. The units of measurement are specified on the Units tab.

Max Horizontal Value: This is the position of the right border of the location map in real grid coordinates of either feet or meters. The units of measurement are specified on the Units tab.

Min Vertical Value: This is the position of the bottom border of the location map in real grid coordinates of either feet or meters. The units of measurement are specified on the Units tab.

Max Vertical Value: This is the position of the top border of the location map in real grid coordinates of either feet or meters. The units of measurement are specified on the Units tab.

Show Grid: This is used to turn the grid on and off.

Horizontal Spacing: This is the spacing between horizontal grid lines as shown on the location map in real grid coordinates of either feet or meters.

Vertical Spacing: This is the spacing between vertical grid lines as shown on the location map in real grid coordinates of either feet or meters.

Line Style Button: Clicking the line style button opens a Line properties form on which the user can user select the type of grid lines.

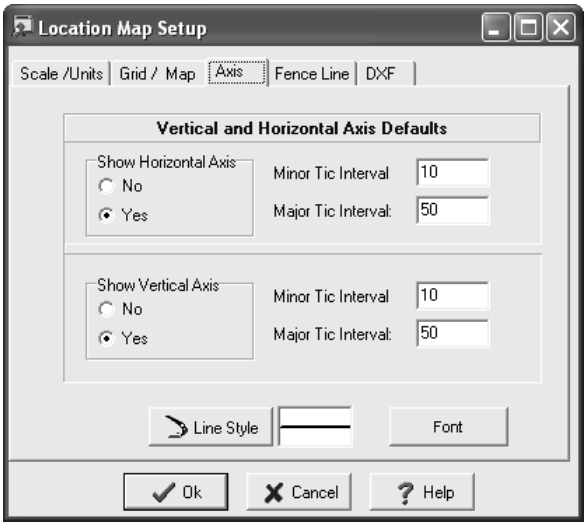
Axis Tab

The Axis Tab, sown on the next page, sets the horizontal and vertical axis defaults for the project location map. The following information can be entered and edited using this tab:

Show Horizontal Axis: This radio button allows the user to turn the Horizontal axis on the location map on or off.

Show Vertical Axis: This radio button allows the user to turn the Vertical axis of the location map on or off.

Min Tic Interval: This is interval (in feet or metres) at which small tic occurs on both the horizontal and vertical axis of the location map. The units of measurement are specified on the Units tab.



Max Tic Interval: This is interval (in feet or metres) at which large tics and axis labels occurs on both the horizontal and vertical axis of the location map. The units of measurement are specified on the Units tab.

Line Style Button: Clicking the Line Style button opens a Line Properties form on which the user can user select the type of axis line they would like on the location map.

Font Button: The Font button allows the user to edit the size of the axis font . Clicking on the button opens up the Font Style form.

Fence Line Tab

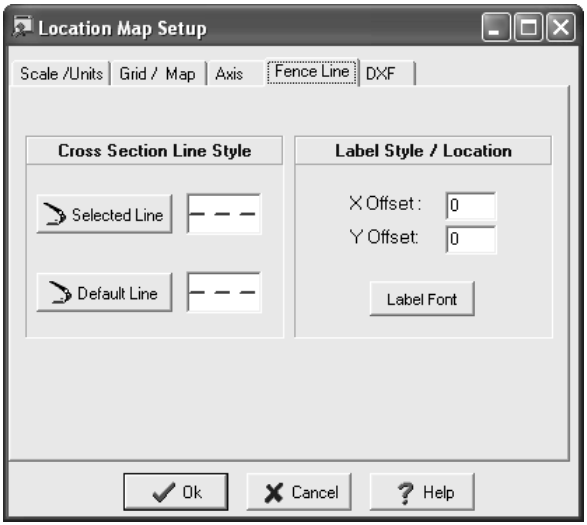
The Fence Line tab, shown on the next page, controls the appearance of the cross-sections on the location map. The following information can be entered and edited using this tab:

X Offset: This is the offset (in feet or metres) of the labels from the beginning and end of the fence lines in the horizontal direction. The units of measurement are specified on the Units tab.

Y Offset: This is the offset (in feet or metres) of the labels from the beginning and end of the fence lines in the vertical direction. The units of measurement are specified on the Units tab.

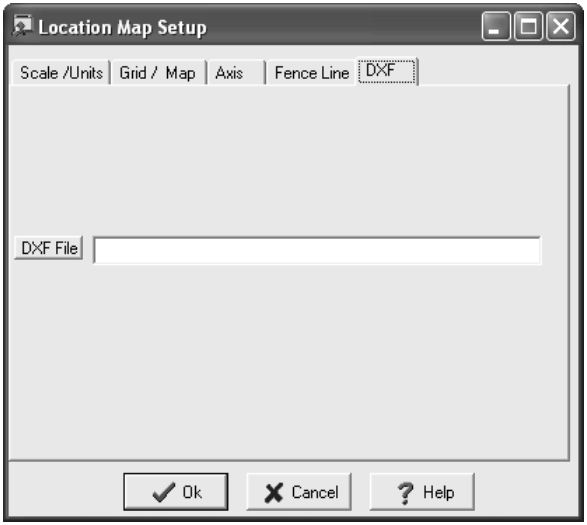
Line Style Button: Clicking the line style button opens a Line properties form on which the user can user select the type of fence line representation they would like on the location map.

Font Button: The Font button allows the user to edit the fence line font. Clicking on the button opens up the Font Style form. This form allows the user to change the font, font size, font color and font style.



DXF Tab

The DXF tab is used to specify the DXF file that can be used as an overlay on to the location map.



To select the DXF file press the DXF File button and then select the file from the form.

Save Button

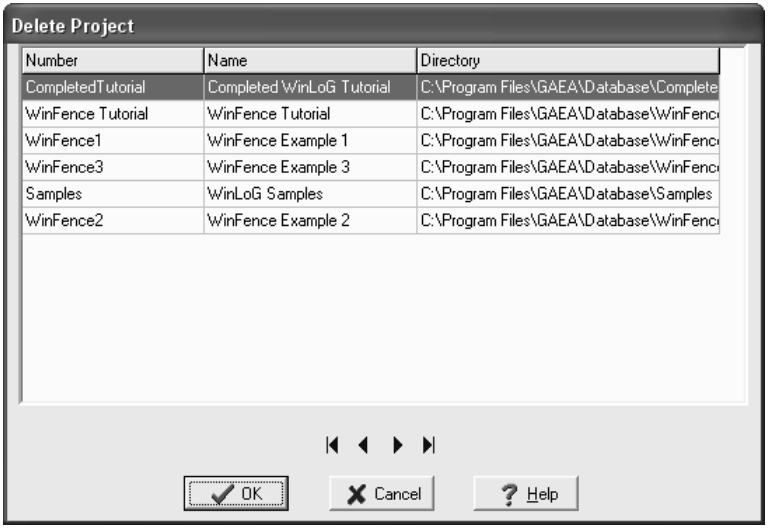
The Save button will save the current settings of the location map so that it will appear the same the next time the project is opened.

Closing the Project

The current project can be closed so that no more changes can be made by selecting the Close Project menu item of the Projects submenu or· clicking the Close button on the Project Toolbar.

Deleting a Project

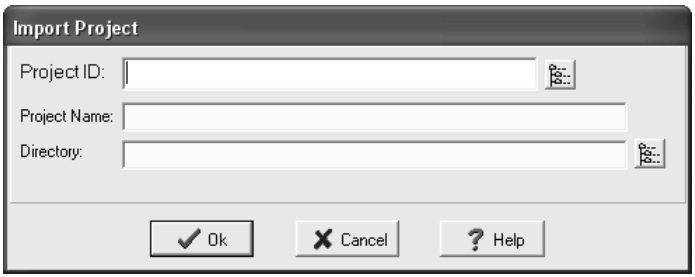
An existing project can be deleted by selecting the Delete Project menu item from the Projects submenu. When this is selected, a list of existing projects will be displayed as shown below.



Select the project to be deleted, and then press Ok. Note that once a project is deleted the data can not be recovered.

Importing a Project

Existing projects can be imported by selecting the Import Project menu item of the Projects sub-menu. When selected the Import Project form below will be displayed.



This form can be used to specify the following information:

Project ID: A unique project number (up to 100 characters). The name cannot contain any of the following characters "/ \ # | @ ^ ( ) & ". When importing a project it is very important that the correct Project ID be specified. The Project ID is used to determine the name of the database file to be imported. For example, if the Project ID is 98020 then the name of the database file to import would be 98020winfence.mdb.

Project Name: The name of the project.

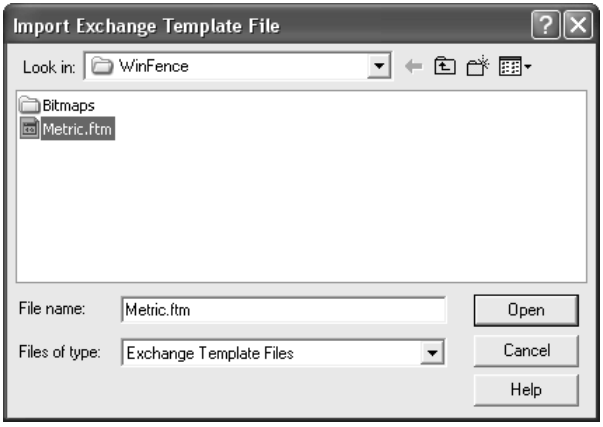
Directory: The directory to be used to store the project database tables (up to 255 characters). This directory can be on a local computer or a network server.

This option should be used to import projects that have been previously created but are not included in the Master Project database.

Importing Data

Exchange files are used to transfer cross-section data and templates between projects or to other companies. The data in these files is stored as ASCII text. Cross-section data exchange files have the extension ".sec" and template exchange files have the extension ".ftm". After the data has been exported from another project, it can then be imported into the current project.

To import an exchange file select either the Template or Cross-Section menu item from the Import submenu. The Import form below will be displayed. Select the file to import and press the Open button. If no project is currently open the Cross Section menu item is disabled.



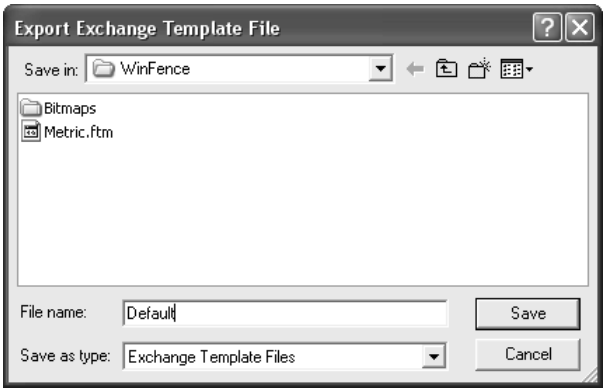
Exporting Data

Cross-sections and templates can be exported for use in other programs using the Export submenu. Cross-section data and templates can be exported to exchange files, the clipboard (in bitmap format), a bitmap file, or an enhanced metafile.

Exchange Files

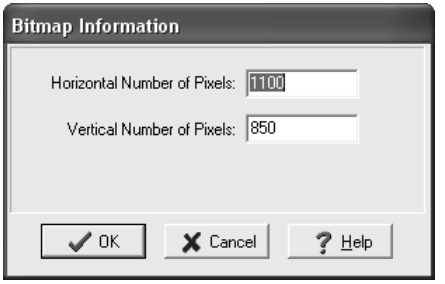
Exchange files are used to transfer cross-section data and templates between projects or to other companies. The data in these files is stored as ASCII text. Cross-section data exchange files have the extension ".sec" and template exchange files have the extension ".ftm". After the data has been exported from another project, it can then be imported into the current project.

To export the currently displayed sieve analysis or template select the Exchange File menu item from the Export submenu. The Export form on the next page will be displayed. Specify the file name for the exported data and then press the Save button.



Clipboard

Any currently displayed cross-section or template can be exported to the Windows clipboard. The format used to store the data in the clipboard is similar to a bitmap file. To export the data to the clipboard select the Clipboard menu item from the Export submenu. The Bitmap Information form shown below will be displayed.

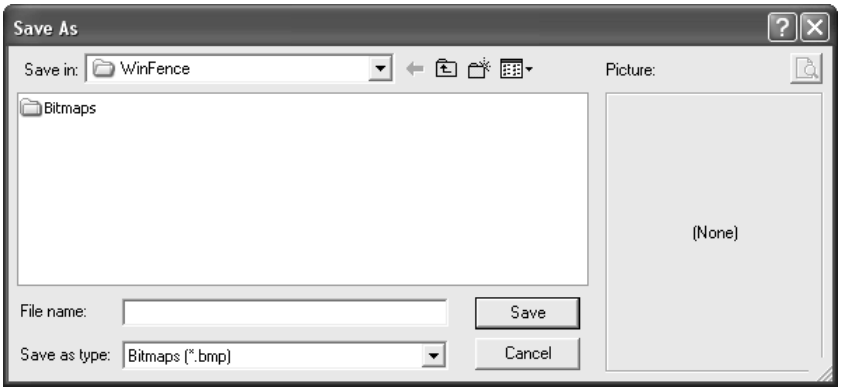


The horizontal and vertical number of pixels determines the resolution used to store the bitmap in the clipboard. The higher the resolution the clearer the picture will be. The number of colors is the same as the current screen resolution.

Bitmap File

Exporting to a bitmap file is the same as exporting to the clipboard, except that the bitmap is stored in a file instead of the clipboard. The file format is a Windows bitmap .BMP file. Any currently displayed cross-section or template can be exported to a bitmap file.

To export to a bitmap file select the Bitmap File menu item from the Export submenu. Specify the file name on the SaveAs form shown on the next page and then press the Save button. After the Save button is pressed, the Bitmap Information form shown below will be displayed. This form is used to set the number of vertical and horizontal pixels for the bitmap file.



Metafile

Exporting to an enhanced metafile is the same as exporting to a bitmap file. Any currently displayed cross-section or template can be exported.

To export to a metafile select the Metafile menu item from the Export submenu. Specify the file name on the SaveAs form and then press the Save button.

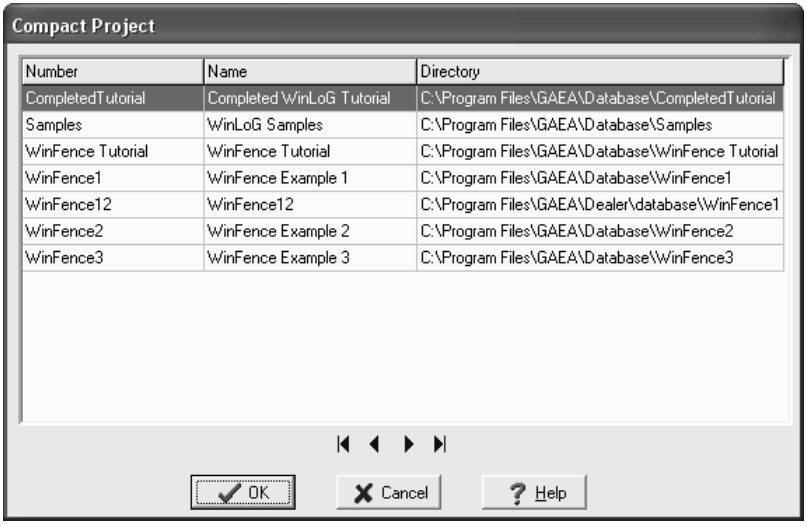
Managing a Project Database

WinFence uses Microsoft Access databases to store all its Templates, Cross-sections, Fence Diagrams, Legends, Libraries, Projects, etc. In version 2 several new features have been added to make managing these databases easier and quicker. These are:

- Compressing and Repairing a Database
- Backing up a Database
- Restoring a Database
- Backing up all WinLoG Data

Compressing and Repairing a Database

Compressing and repairing a WinFence project or main database can be accomplished by selecting the Compact and Repair Database submenu from the Projects submenu. Then select either to compact and repair the main database or a project database. If a project database is selected, the Compact Project Form below will be displayed.



Select the project database you wish to compact and then press the Ok button.

Backing Up a Database

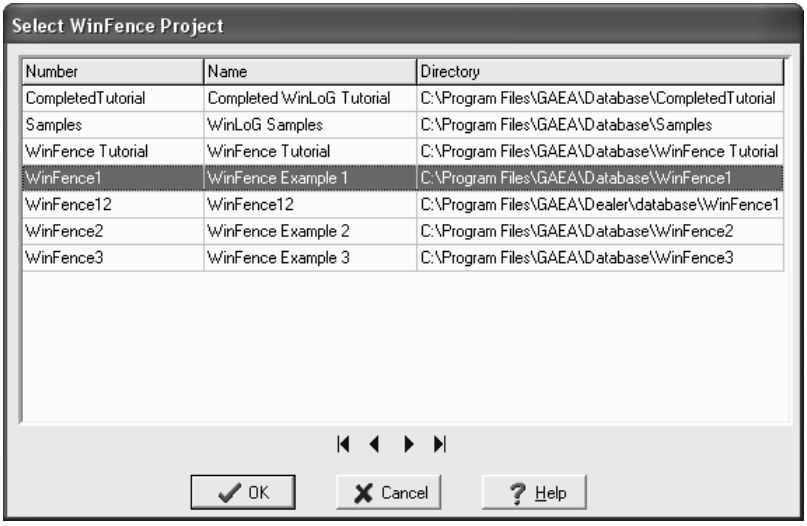
WinFence has the ability to automatically backup all databases at regular intervals while the user is editing and creating new templates, logs, and projects. You can decide how often you would like to backup your data. To set the time intervals between backups, select the Preferences menu item from the File menu. This option is described in the Preferences section below.

Restoring a Database

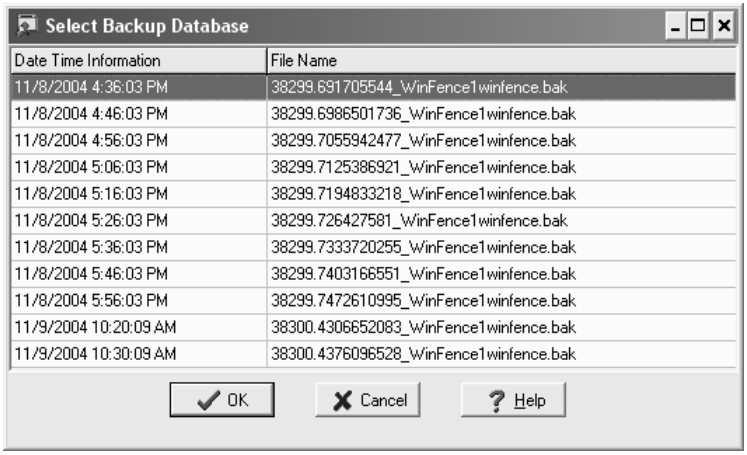
Restoration of a backed up database is very simple. Select the Individual Project menu item from the Restore Backup Database submenu of the Projects submenu from the File menu. A confirmation message will be displayed, select Yes to continue, and the Restore Project Database Form will be displayed.

Restoring an Individual Project Database

When the Individual Project menu item is selected from the Restore Backup Database submenu, the Restore Individual Project Database form below will be displayed. This form allows you to select the project that your would like to restore.



After a project has been selected the Select Backup Database form below will be displayed. This form lists all the backup databases for an individual project. The date and time information indicates the date and exact time at which the project databases were backed up.



Select the database you wish to restore and then press the Ok button. The project database will then be restored.

Restoring the Project List Database

To restore a backup of the Project List Database select the Project List menu item from the Restore Backup Database submenu. A confirmation form will be displayed, select yes to continue and the Select Backup Database form will be displayed.

The Select Backup Database form lists all the backup databases for the project list database. The date time information indicates the date and exact time at which the project list database was backed up. Select the database you wish to restore and then press the Ok button.

Restoring the Main Database

To restore a backup of the Main Database select the Main Database List menu item from the Restore Backup Database submenu of the Projects submenu from the File menu. The Select Backup Database form will be displayed. The Select Backup Database form lists all the backup databases for the main database. The date time information indicates the date and exact time at which the project list database was backed up. Select the database you wish to restore and then press the Ok button.

Setting Project Passwords

It maybe advantageous for some companies to create Projects that have a password associated with them. In this way accidental editing or deleting of boreholes can be avoided since only employees knowing the password to the project would be able to open or edit it. Project password locking is done by selecting the Change Password menu item from the Projects submenu of the File menu. This will open the Change Password form.

There are three editable fields on this form.

Current Password: The current password of the project. If the project doesn't currently have a password then leave this blank.

New Password: The new password of the project. If you want to remove the old password then set this to blank.

Confirm New Password: The new password again of the project. If you want to remove the old password then set this to blank.

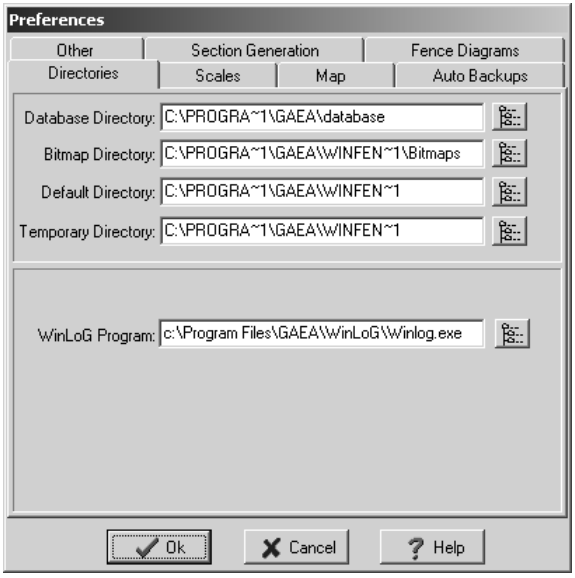
Opening a Password Locked Project

To open a project that has been password locked simply follow the same procedure as a user would normally follow to open a project. This will open up the Password form if the project is password locked, otherwise the project will open normally.

Setting Program Preferences

Using the Preferences menu item of the File menu, preferences for file directories and display characteristics can be set for the WinFence program. When this menu item is selected the Preferences form is displayed. This form has seven tabs used for setting program preferences.

Directories Tab



The following parameters can be set on the Directories tab:

Database Directory: This is the directory where the Master Project Database is located. It should only be changed if the database has been moved. The directory can be changed by entering the new directory or pressing the Select Directory button to the right of the input line.

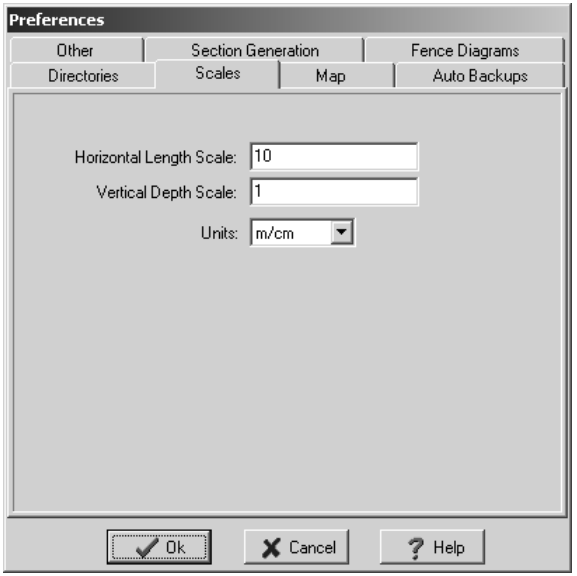
Bitmap Directory: This is the directory where the bitmaps for lithologic symbols are stored. This directory should only be changed if these symbols have been moved. To change the directory, specify the directory name in the input line or press the Select Directory button to the right.

Default Directory: This is the initial directory used when importing and exporting data.

Temporary Directory: This is the directory where temporary files are stored. These files are created by the undo process.

WinLoG Program: This is the location of the WinLoG program. It is used when you double-click on a borehole log in a cross-section to open the log in the WinLoG program. If you do not have access to the WinLoG program this field can be left blank.

Scales Tab



The following parameters can be set on the Scales tab:

Horizontal Length Scale: This is the default horizontal scale using the same units as specified below. In the form shown above the horizontal scale is 10 m/cm.

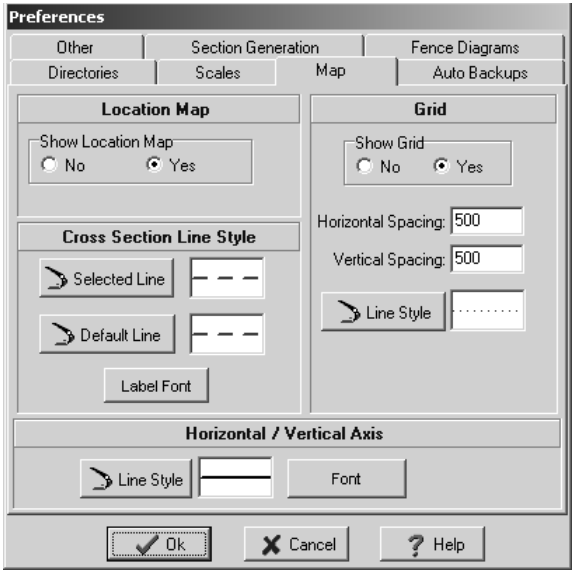
Vertical Depth Scale: This is the default vertical scale using the same units as specified below. In the form shown above the vertical scale is 1 m/cm.

Units: This is the default units to use for the horizontal and vertical scales. The units can be m/cm, m/in, ft/in, or ft/cm.

Map Tab

The Map tab shown on the next page is used to specify the following parameters:

Show Location Map: This radio button allows the user to turn the location map on or off.



Cross Section Line Style: Clicking either of the line style button opens a Line properties form on which the user can user select the type of line representation they would like on the location map for the selected and default lines.

Cross Section Label Font: The font button allows the user to edit the label font. Clicking on the button opens up the Font Style form. This form allows the user to change the font, font size, font color and font style.

Show Grid: This is used to turn the grid on and off.

Horizontal Spacing: This is the spacing between horizontal grid lines as shown on the location map in real grid coordinates of either feet or meters.

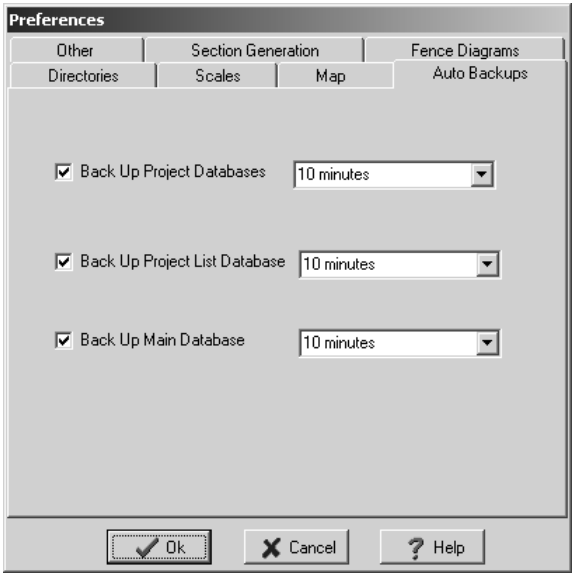
Vertical Spacing: This is the spacing between vertical grid lines as shown on the location map in real grid coordinates of either feet or meters.

Grid Line Style: Clicking the line style button opens a Line properties form on which the user can user select the type of grid lines.

Horizontal/Vertical Axis Line Style: Clicking the line style button opens a Line properties form on which the user can user select the type of axis line they would like on the location map.

Horizontal/Vertical Axis Font: The font button allows the user to edit the size of the axis font .

Auto Backups Tab



The following parameters can be set on the Auto Backups tab:

Back Up Project Database: If this checkbox is checked then the currently open project will be backed up at a regular interval defined by the combobox to the right of it. If this checkbox is not selected then the currently open project will not be backed up.

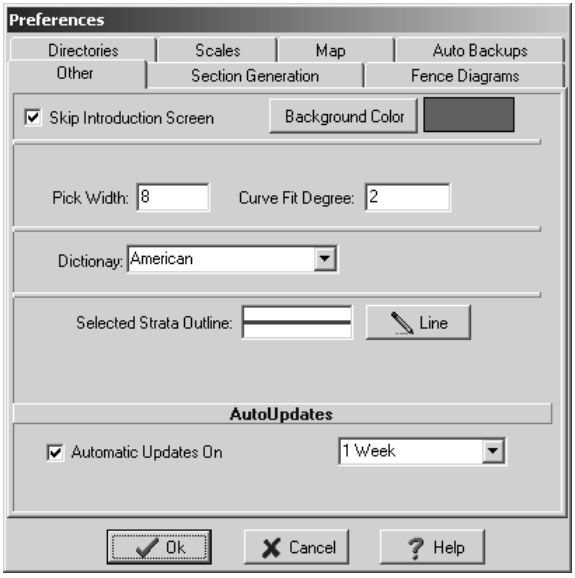
Back Up Project List Database: If this checkbox is checked then the WinLoG project list database will be backed up at a regular interval defined by the combobox to the right of it. If this checkbox is not selected then the WinLoG project list database will not be backed up.

Back Up Main Database: If this checkbox is checked then the WinLoG main database will be backed up at a regular interval defined by the combobox to the right of it. If this checkbox is not selected then the WinLoG main database will not be backed up.

Other Tab

The following parameters can be set on the Other tab shown on the next page:

Skip Introduction Screen: When this box is checked the Startup Introduction screen will not be displayed.



Background Color: Press the Background Color button to change the color of the background when the program is first started.

Pick Width: This controls how close the cursor has to be to an object's edge to pick the object. This setting is used when adjusting the size and position of columns, layers, lines, etc. A setting between 10 and 20 is recommended.

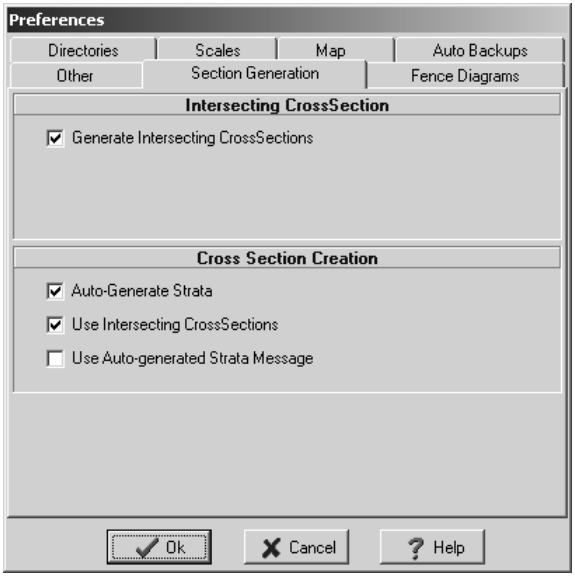
Curve Fit Degree: This is the degree of curvature to use to draw the boundaries of the strata. Curve fitting can be turned on and off individually for each strata. A value of one will connect the data points by a straight line, and a value of five will fit a smooth curve between the points (not necessarily going through each point). A value of two is recommended, which will connect the points by a curve that goes through each point.

Dictionary: This is the dictionary to use when performing spell checking. One of the following dictionaries can be selected: American, British, Dutch, English, French, German, Italian, and Spanish.

Selected Strata Outline: This the style of the line used to draw the boundaries of the currently selected strata. The style of the line can be changed by pressing the Line button to the right.

Automatic Updates: When this box is checked the program will automatically check and install updates to the program from the Internet. If you have an Internet connection to your computer it is recommended that this box be checked.

Section Generation Tab



The following parameters can be set on the Section Generation tab:

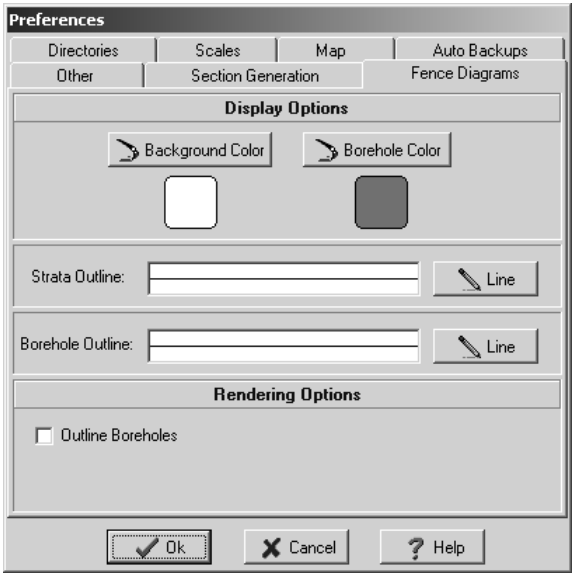
Generate Intersecting Cross Sections: When this box is checked any intersecting cross-sections will be shown on a cross-section.

Auto-Generate Strata: When checked the program will use it's built-in intelligence to create the strata for a new cross-section. This works very well for most normal geologies; however, it may not work well for complex geology or faulting.

Use Intersecting Cross Sections: When checked intersecting cross-sections will be used when auto-generating the strata of a new cross-section. The intersecting cross-sections are treated like additional wells when generating the cross-section strata. If the Auto-Generate Strata box is not checked this box will be disabled.

Use Auto-Generate Strata Message: When checked a message will be displayed when a new cross-section is created, asking whether to auto-generate the strata. If the Auto-Generate Strata box is not checked this box will be disabled.

Fence Diagram Tab



The following parameters can be set on the Fence Diagram tab shown above:

Background Color: This is the color of the screen background for the fence diagram. When the button is pressed a select color form will be displayed.

Borehole Color: This is the color of the boreholes/wells for the fence diagram. When the button is pressed a select color form will be displayed.

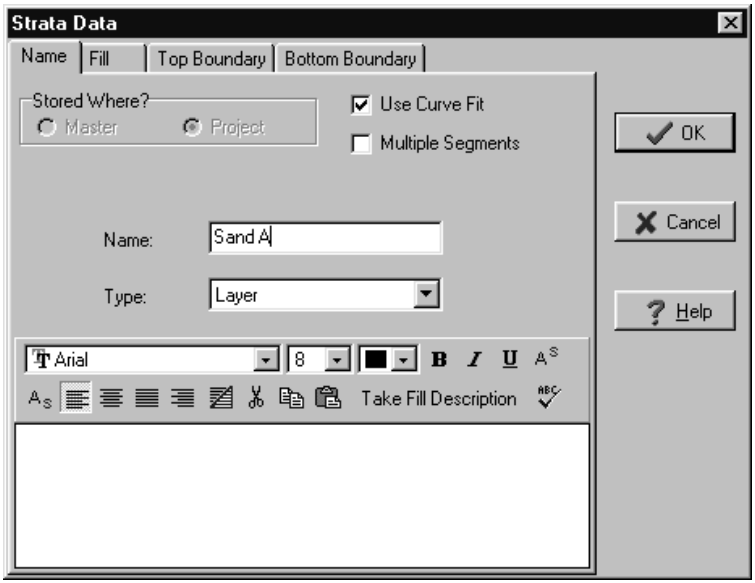
Strata Outline: This is the line style used to outline the strata in the fence diagram. To change the line style, click on the Line button.

Borehole Outline: This is the line style used to outline the boreholes in the fence diagram. To change the line style, click on the Line button.

Outline Boreholes: When checked the boreholes on the fence diagram will have an outline drawn around them.

4.

Cross-Section Data



4 Cross Section Data

Cross-sections are used to depict the geology and stratigraphy of the subsurface. Typically cross-sections intersect several boreholes, and possibly other cross-sections, that may or may not be along a straight line. The stratigraphic information from the boreholes and intersecting cross-sections is combined with other knowledge of the area to generate the cross-section.

WinFence can be used to graphically create detailed, full-color, cross-sections easily and quickly. The program can be used to interpret and map soil and rock layers, contamination, fossils, minerals and hydrocarbons.

In version 2, fence diagrams can now be displayed and manipulated. Fence diagrams are used to show a 3 dimensional representation of one or more cross-sections, that may or may not intersect. In this chapter the creation and editing of cross-sections is described. In chapter 5, the creation and editing of fence diagrams is described.

A wide variety of strata can be used to create cross-sections using WinFence. Types of strata that can be used include layers, faults, lenses, intrusions, and alteration zones. Very detailed and complicated stratigraphy can be represented and easily drawn. Layers can contain multiple segments to represent unconformities and erosion in highly faulted zones.

In version 2 there is the option to have the program automatically generate the cross-section. This is done using artificial intelligence (AI) built-into the program. When determining how to connect the strata between boreholes, wells, and intersecting cross-sections the program looks at the similarities in the lithologies, thicknesses, and occurrence of the strata. This methodology works well with most geologies; except, where the geology is very complicated or there are faults. In addition, the program's AI will not be able to determine alteration zones. However, these zones can be added and the strata can be edited after the cross-section has been generated.

Also new in version 2 is the ability to display and use deviated boreholes and wells. The deviated borehole and well data must first be entered in WinLoG. After the deviation data has been entered the borehole/well will be displayed in true depth on the cross-sections.

WinFence shares the same database as WinLoG, and can be used to access and plot the borehole data entered in WinLoG. Several types of borehole data can be plotted on the cross-sections; including lithologic symbols, sample symbols, core logs, well diagrams, graphs, and geophysical logs. The actual borehole log data can be opened and edited in WinLoG by double-clicking on it in WinFence.

All cross-section data for a project is stored in a Microsoft Access database. This database allows for the quick storage and retrieval of cross-section data and can be interfaced with a variety of other programs. There is no limit to the number of projects and cross-sections that can be stored in the database. The database is setup to work across a network if desired, with each project stored in a separate directory.

The format of the cross-section is controlled by a template, that can be easily edited and customized. Templates are used to specify the format and position of the cross-section, title bar, legend block. location map, and scale bar. Company logos, bitmaps, text paragraphs, lines, arrows, and rectangles can also be added to templates. Customizing of templates is explained in detail in Chapter 5.

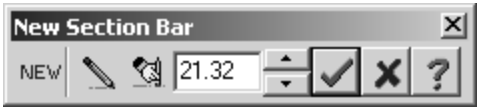
This chapter describes how to:

1. Create a new cross-section
2. Open an existing cross-section
3. Edit a cross-section
4. Save a cross-section
5. Print a cross-section
6. Delete a cross-section

These tasks can be performed using menu commands on the Edit menu or buttons on the Cross Section toolbar.

Creating a New Cross Section

After a project has been created or opened a new cross-section can be created by selecting the New Cross Section menu item in the Cross Sections submenu of the File menu or the New button on the Cross Section or Location Map toolbars. The New Cross-Section toolbar below will then be displayed.



The buttons on this toolbar are used to perform the following tasks:

The **Line** button is used draw the pathline of the cross-section on the location map. When this button is pressed the cursor will change to cross-hairs and you will be able to draw the pathline. The drawing of pathlines is described in detail in the Drawing Pathlines section below.

The **Erase Line** button is used to erase the currently drawn pathline.

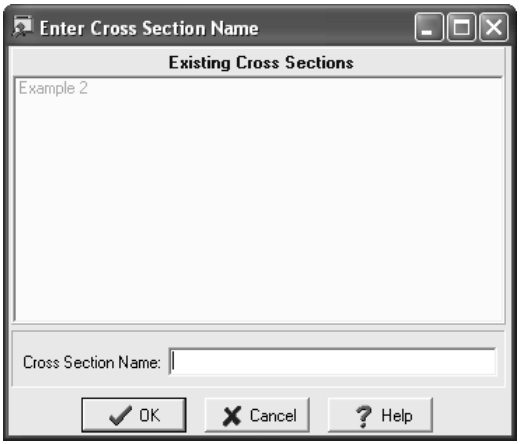
The **Path Width** sliding bar and entry is used to specify the width of the pathline to use when selecting intersecting wells/boreholes. This feature is described in detail in the Drawing Pathlines section below.

The **Ok** button is used to complete the pathline entry and create the cross-section.

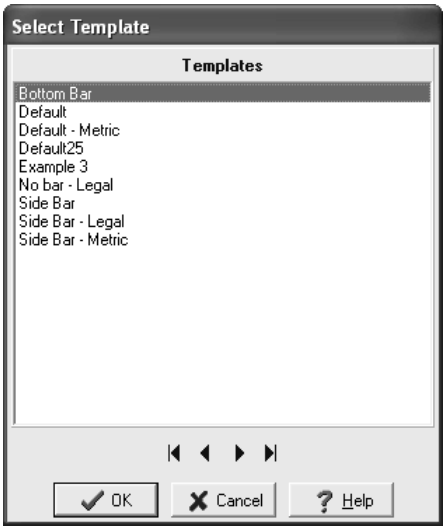
The **Cancel** button is used to abort the creation of the cross-section. When it is pressed the toolbar will disappear.

The **Help** button will display help on creating a cross-section.

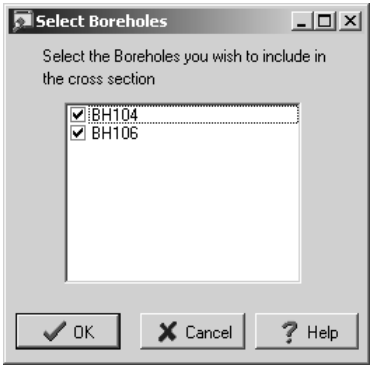
After the pathline has been specified and the Ok button pressed, the Enter Cross Section Name form below will be displayed. This form displays a list of current cross-sections in the project. Enter a unique name for the cross-section and then press the Ok button.



Next a template needs to be selected for the cross-section. After the Ok button on the Enter Cross Section Name form has been pressed, the Select Template form shown on the next page will be displayed. Select the template to use and then press the Ok button.



After the template has been selected, the Select Boreholes form below will be displayed. This form can be used to select which boreholes will appear on the cross-section. By default, all of the boreholes within the pathline are selected.

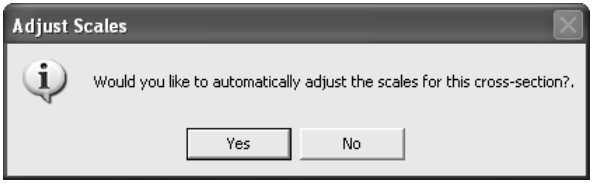


Select the boreholes to be included in the cross-section and then press the Ok button. The Adjust Scales form below will be displayed. Select Yes to have the program automatically adjust the horizontal and vertical scales so that the cross-section fits on one page. Select No to use the scales specified in the template. If the cross-section does not fit on one page it will be cropped.

The new cross-section will then be displayed. This cross-section can be edited and saved as described in the sections below.

Auto Generation of Cross-Section Strata

In version 2 there is the option to have the program automatically generate the cross-section. This is done using artificial intelligence (AI) built-into the program. When determining how to connect the strata between boreholes, wells, and intersecting cross-sections the program looks at the similarities in the lithologies, thicknesses, and occurrence of the strata. This methodology works well with most geologies; except, where the geology is very complicated or there are faults. In addition, the program's AI will not be able to determine alteration zones. However, these zones can be added and the strata can be edited after the cross-section has been generated.

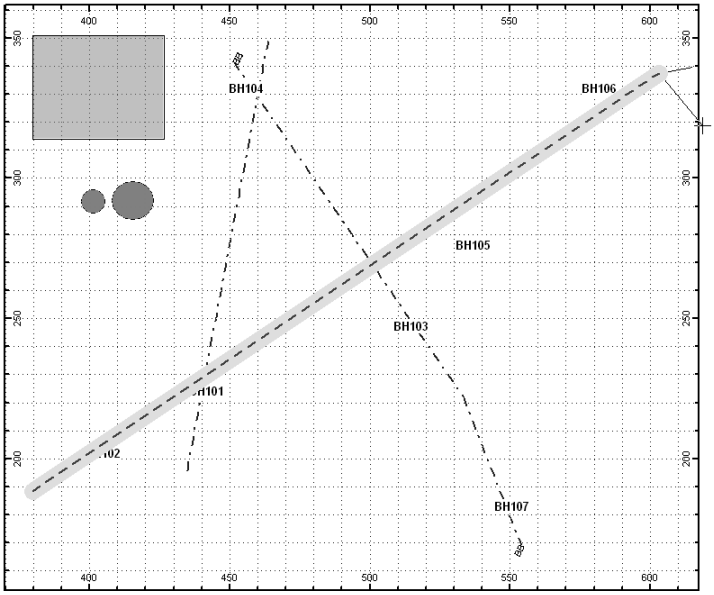


The auto generation of the cross-section can be turned on and off on the Auto Generation tab in the program's Preferences. See Chapter 3 for a description of how to adjust the auto generation in the program's Preferences.

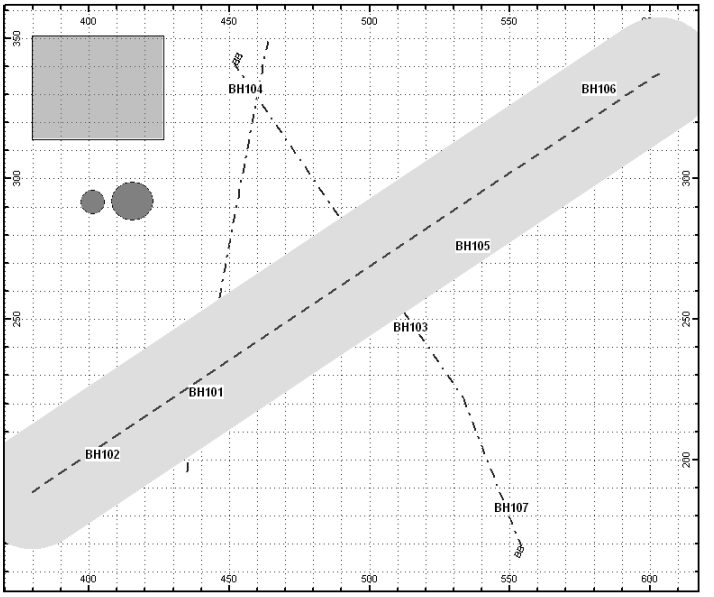
Drawing Pathlines

The pathline of the cross-section can be drawn by pressing the Line button on the New Cross-Section toolbar. The cursor will then change to a "cross-hair". Click on the location of the starting point of the cross-section and then click on each point of the pathline. Only the points where the pathline bends need to be clicked. At the last point on the path line double-click the mouse. The pathline will then be drawn as shown below.

The selected wells will be highlighted as specified with the Symbols button. In the map above the selected well symbols are larger. To increase the number of wells selected slide the Path Width slidebar down. The wells selected on the Location Map will then be increased as shown on the next page.



When specifying the start and end of the pathline it should be noted that these points are also used to determine the distance between the edge of the cross-section and the first and last boreholes. It is recommended that the start and end points be placed a little past the first and last boreholes of the cross-section.



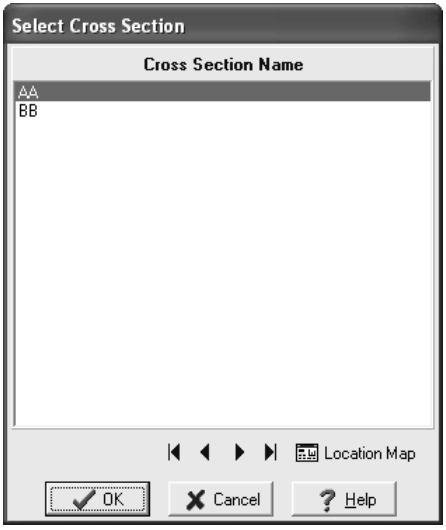
After the desired pathline and wells have been selected, the cross-section can be created by pressing the Ok button.

Opening a Cross Section

After a cross-section has been created and saved it can be opened by:

- Clicking on the Open button on the Cross Section toolbar;
- Clicking on it on the Location Map; or
- Selecting the Open Cross Section menu item from the File menu.

If the Open button or Open Cross Section menu item are used, the Select Cross Section form below will be displayed. Using this form the cross-section to be edited can be selected.



Editing a Cross Section

After the cross-section has been opened or created it can be edited using the Edit and Popup menus, Cross-Section (SEC) Toolbar, and Strata Toolbar. Editing of the cross-section consists of creating and entering layers, lenses, faults, intrusions, and alteration zones. In WinFence these features are referred to collectively as strata. In addition, the drawing order, title bar, legend, and scales can be edited.

Each strata in a cross-section consists of a strata definition and one or more boundaries. The strata definition includes the name of the strata, its description, bitmap symbol, and boundary line styles. Strata definitions can be stored either in the master database or the project database. If the strata definition is stored in the master database it will be available to all projects. If the strata definition is stored in the project database it will only be available to cross-sections within that project.

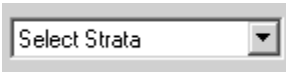
The number of boundaries a strata has depends on the type of strata. Layers have a top and bottom boundary. Faults, lenses, alteration zones, and intrusions have only one boundary. These boundaries can be defined by a series of points on the cross-section, or by the boundaries of other strata.

The cross-section can also contain paragraph text, lines, bitmaps, and rectangles. When these features are added to the cross-section they will only appear on the cross-section in which they are added. To have them appear on all cross-sections, they need to be added to the template.

The editing of the cross-section is described in the sections below. The first three sections describe the creation and editing of strata in detail, since this will comprise the majority of the editing of the cross-section.

In version 2, a new Strata Toolbar shown below has been added to make the editing of strata easier. The use of this toolbar is described in the sections below.

Selecting Strata

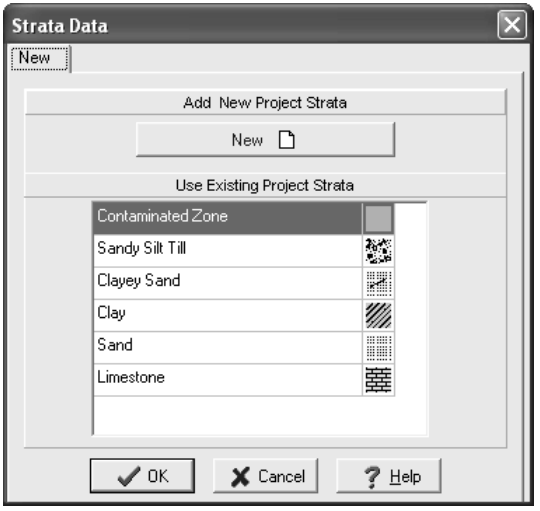


Before a strata can be edited it needs to be selected. The strata can be selected using the Select Strata button on the Strata toolbar or using the Strata submenu on the Popup menu.

When a cross-section is created the ground surface strata is automatically generated and added to the strata list. Unless the auto generate strata option was used to create the cross-section all other strata must be added as described in the section below. If the auto generate strata option was used the strata will be automatically generated and added to the strata list. Any additional strata can then be added as described below.

Adding Strata

New strata can be added to the cross-section using either the Add Strata button on the Strata tool-bar or the Add Strata menu item on the Select Strata submenu. The Add Strata form below will then be displayed.

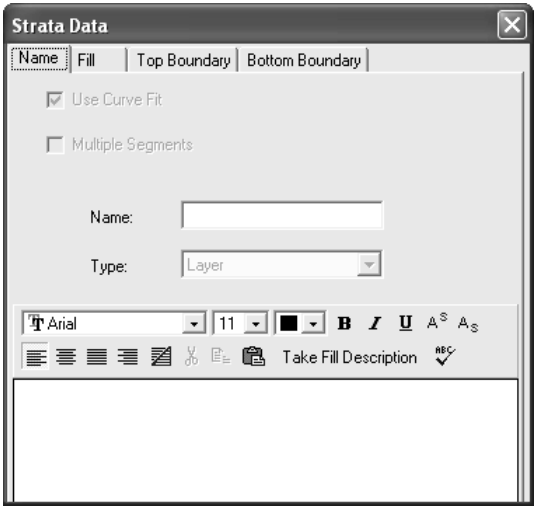


Either an existing strata definition can be used or a new strata definition can be created. The list of existing strata will contain any unused strata in the project. The strata for this list are taken from the WinLoG project and any other cross-sections in the WinFence project.

If an existing strata in the project is selected, the strata will be added to the cross-section and the boundaries of the strata can be added as described in the Add Boundaries section below.

If a new strata is selected by pressing the New button, the Strata Data form below will be displayed. This form had form tabs for specifying the properties of the strata. The recommended order for adding strata is:

1. Faults
2. Intrusions
3. Layers
4. Lenses
5. Alteration Zones



Name Tab

The Name tab above can be used to specify the following information:

Use Curve Fit: Check to fit a smooth curve through the boundaries of the strata. If unchecked the boundaries will be created using straight line segments between boundary points. When a smooth curve is fit to the boundaries the curve fit factor specified in Preferences is used. This factor can be adjusted to control the amount of smoothing.

Multiple Segments: Check if the strata is to contain multiple segments. Otherwise the strata can contain only one segment. Only use multiple segments where strata are discontinuous.

Name: This is the name of the strata. When a new strata is initially created this field is an input box and a unique name can be entered. After the strata has been created it becomes a combo box that can be used to select a different strata in the cross-section.

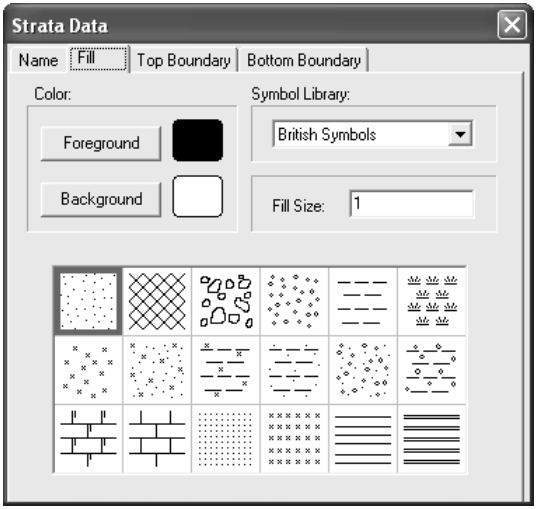
Type: This is the type of strata. It can be either a layer, lense, alteration zone, fault, or intrusion. The type of strata is defined when the strata is initially created and can not be changed.

Description: This is the description of the strata. The description will appear in the legend if the strata is included in the legend. There is a Memo Toolbar at the top of the description field that can be used to edit the description. The speed buttons on the toolbar preform the following functions.

The **Take Fill Description** button will copy the fill description used in the symbol library to the description for the strata.

Fill Tab

The Fill Tab shown below is used to select the lithologic library and symbol to use for the strata.



The Fill Tab can be used to specify the following information:

Symbol Library: This is used to select the symbol library for the strata. When the arrow at the right is pressed a list will display the available symbol libraries. After a library has been selected the symbols displayed in the tab will be updated. The WinFence program comes with the same symbol libraries as WinLoG. Additional symbol libraries can be created using the Symbol Libraries submenu of the File menu (see Chapter 7). In addition, any symbol libraries created in WinLoG can be used in WinFence.

Symbol: The symbol for the strata can be selected by clicking on one of the 18 symbols displayed for the current library. The selected symbol is highlighted with a blue border.

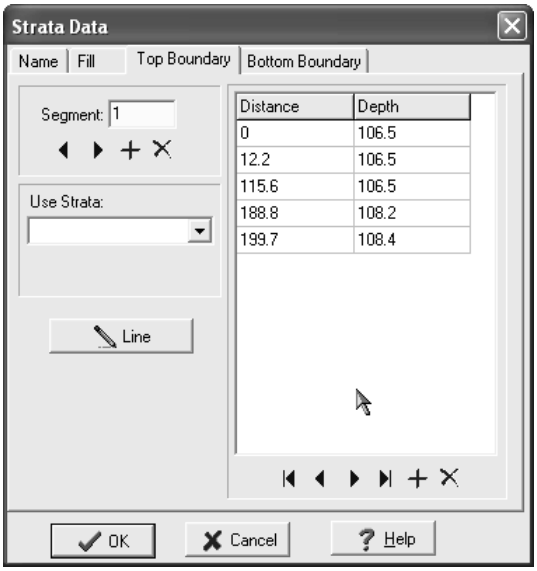
Fill Size: The fill size is used to expand or condense the symbol before it is drawn. The size of the symbol is multiplied by the fill size and then the symbol is drawn. For example, a fill size of 2 will result in the symbol being doubled in size. The fill size must be greater than 0.

Foreground Color: This is the color to use for the shaded parts of the symbol. The foreground color can be changed by pressing the Foreground Color button. When this button is pressed a Color form will be displayed. This form can be used to select a basic color or specify a custom color.

Background Color: This is the color to use for the unshaded parts of the symbol. The foreground color can be changed by pressing the Foreground Color button. When this button is pressed a Color form will be displayed. This form can be used to select a basic color or specify a custom color.

Boundary Tabs

The Boundary Tab shown on the next page can be used to enter and edit the points that are used to create the boundaries of the strata. The number of tabs depends upon the type of strata currently selected. Layers have a top and bottom boundary. Faults, lenses, alteration zones, and intrusions have only one boundary. These boundaries do not need to be entered on these tabs, they can also be picked using the mouse.as discussed in the Editing Strata section below.



The following information can be specified in the Boundary tabs:

Segment: This is the current segment of the boundary. Strata can have multiple segments allowing them to be discontinuous. Multiple segments are most often used in heavily faulted areas. The buttons at the bottom are used to move to the previous segment, move to the next segment, insert a segment, and delete the segment.

Use Strata: This is used to select an existing strata for the boundary instead of specifying the points. When the arrow to the right is pressed a list of existing strata will be displayed.

Line: This is the style of line to use when drawing the boundary. When the Line button is pressed a Line Properties form will be displayed. This form can be used to select a line style, color, and width.

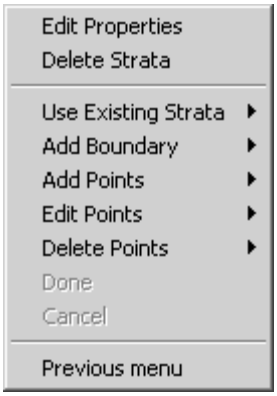
Distance: The coordinates for the points describing the boundary are displayed as a series of distances and depths. Each boundary must start and end on the edge of the cross-section or on another boundary. This is the horizontal distance to the point in the same units as specified in the template.

Depth: This is the vertical depth to the point in the same units as specified in the template.

Editing Strata

After a strata has been created or selected it can be edited using the Edit Strata popup menu. This menu can be obtained by clicking the right mouse button on the cross-section.

The Edit Strata popup menu can be used to edit the properties of the strata definition and boundaries, delete the strata, add and edit boundaries, or return to the previous menu. The boundaries for the strata can be edited interactively using the mouse or specified with the keyboard using the Edit Properties menu item.



The number of boundaries a strata has depends on the type of strata. Layers have a top and bottom boundary. Faults, lenses, alteration zones and intrusions have only one boundary. These boundaries can be defined by a series of points on the cross-section, or by the boundaries of other strata. If the strata has a top and bottom boundary then the Use Existing Strata, Add Boundary, Add Points, Edit Points, and Delete Points menu items will be submenus that can be used to select either the top or bottom boundary. Otherwise, these menu items will automatically select the boundary of the strata.

When adding or editing a boundary interactively using the mouse, the current editing can be canceled by clicking the right mouse button and selecting Cancel on the Edit Strata popup menu. In addition, the current editing can be completed by selecting Done on the popup menu.

If the Previous Menu menu item is selected the strata will no longer be selected. The next time the right mouse button is clicked the Cross Section popup menu will be displayed.

Edit Properties

To edit the properties of the selected strata either click on the Edit Properties button on the Strata toolbar or select the Edit Properties menu item from the Edit Strata popup menu. The Strata Data form will be displayed. This form is described in detail in the previous Adding Strata section.

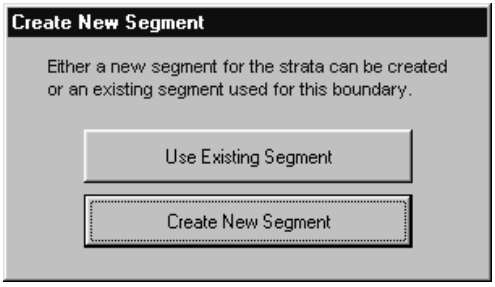
Delete Strata

The currently selected strata can be deleted either by clicking on the Delete Strata button on the Strata toolbar or be selecting the Delete Strata menu item from the Edit Strata popup menu. After it has been deleted no strata will be selected and the next time the right mouse button is clicked the Cross Section popup menu will be displayed.

Use Existing Strata

Multiple layers can be quickly and accurately drawn by using existing strata for the their top or bottom boundaries. Strata boundaries can either be formed by a series of points drawn on the cross-section or by another strata. To select another strata to use for the boundary select the Use Existing Strata menu item of the Edit Strata popup menu. If the current strata has a top and bottom boundary you will also need to select which boundary you are specifying.

If the boundary has already been specified and contains multiple segments the Create New Segment message below will be shown. Select whether to create a new segment or to re-specify the boundary of the existing segment. If you select to use an existing segment and there is more than one segment you will need to select the segment to use.


Create New Segment
Either a new segment for the strata can be created or an existing segment used for this boundary.
Use Existing Segment
Create New Segment

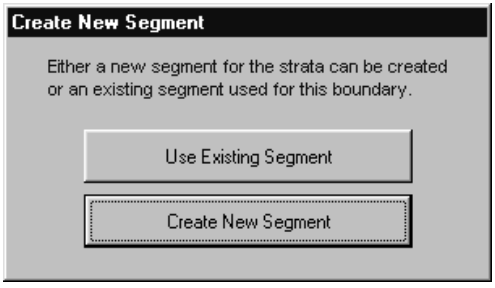
If this is the first time the boundary has been specified the Create New Segment form will not be displayed. The cursor will then change to a hand. Pick the existing strata you wish to use for the boundary using the left mouse button.

When an existing strata is used for a boundary, it is used for the entire boundary of the strata. To use only a portion of an existing strata use snapping instead. If the boundary of the existing strata to be used had a lense attached to it, the lense will form part of the new boundary as well.

Add Boundaries

A strata boundary can also be drawn on the cross-section using the mouse. To draw the boundary select the Add Boundary menu item of the Edit Strata popup menu. If the current strata has a top and bottom boundary you will also need to select which boundary you are specifying.

If the boundary has already been specified and contains multiple segments the Create New Segment message below will be shown. Select whether to create a new segment or to re-specify the boundary of the existing segment. If you select to use an existing segment and there is more than one segment you will need to select the segment to use.


Create New Segment
Either a new segment for the strata can be created or an existing segment used for this boundary.
Use Existing Segment
Create New Segment

If this is the first time the boundary has been specified the Create New Segment form will not be displayed.

The cursor will then change to a cross-hair. Enter the first point on the boundary and then draw the rest of the boundary using the left mouse button. There is no limit to the number of points that can be specified. The start and end points of the boundary must be on either a cross-section boundary or another strata. When you are finished drawing the boundary either double-click the left mouse button or select Done from the Edit Strata popup menu.

When drawing a boundary it is possible to draw part of the boundary and then snap to another existing strata boundary. To snap to an existing boundary double-click the left mouse button on the strata boundary. The remaining part of the boundary will then be formed from the snapped boundary. Snapping to a portion of another boundary can be used to quickly draw pinchouts and unconformities.

Add Points

Additional points can be added to an existing boundary by selecting the Add Points menu item of the Edit Strata popup menu. If the current strata has a top and bottom boundary you will also need to select which boundary you are specifying. If the boundary has more than one segment, the cursor will change to a hand and you will need to select which segment to use.

All of the existing points on the boundary segment will be highlighted with a box. Click on the point that is closest to where you want to add the point. An additional point will be created halfway between this point and the next point. The new point can then be positioned by clicking on it and dragging it with the mouse. In addition, the other points that are highlighted with boxes can also be dragged to a new location with the mouse.

When the new point has been positioned properly select Done from the Edit Strata popup menu.

Edit Points

The points of a boundary can be edited by selecting the Edit Points menu item from the Edit Strata popup menu. If the current strata has a top and bottom boundary you will also need to select which boundary you are editing. If the boundary has more than one segment, the cursor will change to a hand and you will need to select which segment to use.

All of the existing points on the boundary segment will be highlighted with a box. Click and hold down the left mouse button on the point to be edited. Drag the point to its new location and then release the button. The other points on the boundary can also be edited the same way. When you have edited all of the points required select Done from the Edit Strata popup menu.

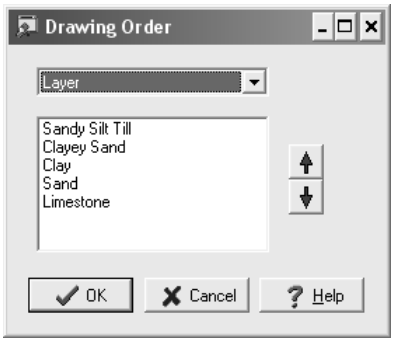
Delete Points

The points of a boundary can be deleted by selecting the Delete Points menu item from the Edit Strata popup menu. If the current strata has a top and bottom boundary you will also need to select which boundary you are editing. If the boundary has more than one segment, the cursor will change to a hand and you will need to select which segment to use.

All of the existing points on the boundary segment will be highlighted with a box. Click on the point to be deleted. The other points on the boundary can also be deleted the same way. When you have deleted all of the points required select Done from the Edit Strata popup menu.

Drawing Order

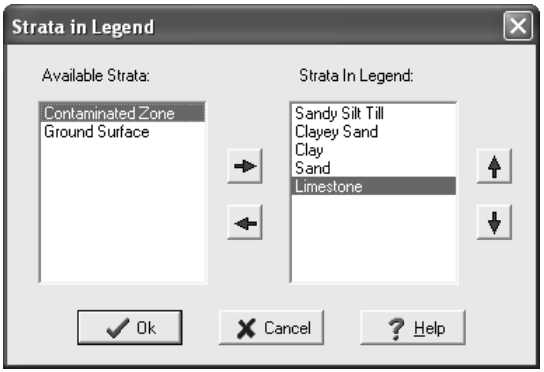
The drawing order of the strata determines which order they will be drawn. If strata overlap the drawing order will affect which strata is in the front and which is in the back. To change the drawing order select the Drawing Order menu item from the Cross Section popup menu or the Edit menu. The Drawing Order form below will be displayed.



The list of strata is sorted by the type of strata. Before adjusting the drawing order, select the type of strata to be adjusted. Then to change the drawing order select a strata and then move it up or down in the list using the Up and Down arrows.

Legend

The legend of the cross-section is used to display the symbol of the strata shown in the cross-section and their descriptions. To add or remove strata in the legend select the Legend menu item in the Cross Section Popup or Edit menus. The Strata in Legend form below will be displayed.



Strata can be added to the legend in the template and in the cross-section. Strata added to the legend in the template will be shown in all cross-sections that use that template. Whereas, strata that are added in the cross-section will only be shown in the cross-section.

The Strata in Legend form is used to specify the following information:

Available Strata: This lists the available strata in the master and project databases that can be included in the legend.

Strata in Legend: This lists the strata currently included in the legend.

The **Right** arrow is used to add the selected strata to the legend.

The **Left** arrow is used to remove the selected strata.

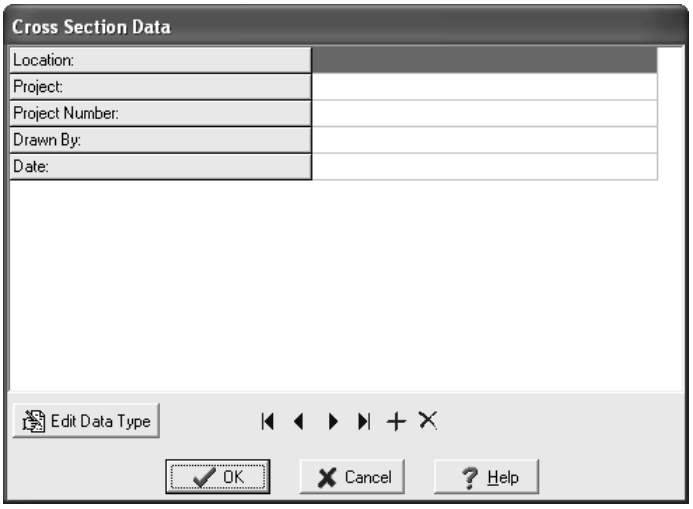
The order of the strata in the list will determine the order they are displayed in the legend. The **Up** arrow is used to move the selected strata up in the legend.

The **Down** arrow is used to move the selected strata down in the legend.

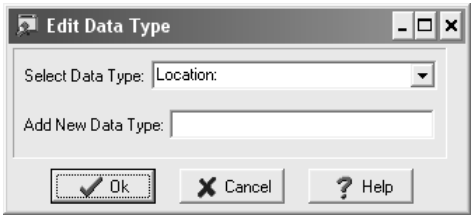
Title Bar

The title bar is used to display general information about the cross-section. This can include information such as project name, location, date, client name, etc. There is no limit to the number of data items that can be displayed.

To edit the Title Bar select the Title Bar menu item from the Edit or Cross Section Popup menu. The Cross Section Data form below will be displayed. New and edited data (up to 255 characters) can be entered on the input lines to the right of the data type.



The template being used for the cross-section will determine the types of data to be entered. To change the type of data press the Edit Data Type button at the bottom of the form. The Edit Data Type form shown below will be displayed. This form will also be displayed when a new input line is inserted.

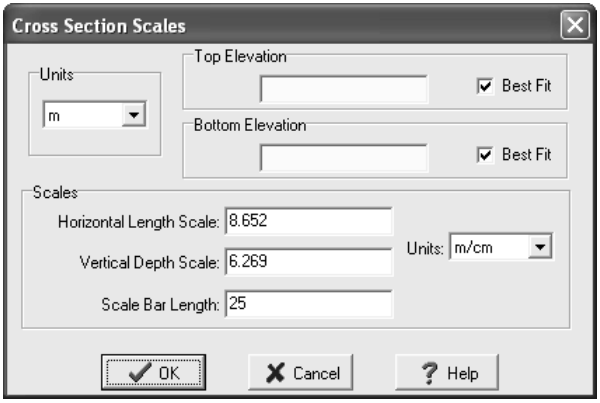


This form can be used to select a different data type from the template or to enter a unique new data type. Care should be used in changing the data type since it will affect where the data is displayed. If a new data type is added it will only be displayed if the exact same data type appears in the template. Data types are case-sensitive and use exact spelling.

Scales

The horizontal and vertical scales together with the elevations are used to determine the size of the cross-section on the page. These scales and elevations are initially set in the template. However, when the cross-section is created there is the option to have the scales automatically adjusted so that the entire cross-section will fit on the page.

To edit the scales and elevations select the Scales menu item form the Cross Section Popup or Edit menu. The Cross Section Scales form below will be displayed.



The Cross Section Scales form can be used to specify the following information:

Elevation Units: These are the units to use for the top and bottom elevations. The units can be feet or meters.

Top Elevation: This is the top elevation of the cross-section. If Best Fit is checked the top elevation will be calculated by the program based on the elevations of the boreholes in the cross-section.

Bottom Elevation: This is the bottom elevation of the cross-section. If Best Fit is checked the bottom elevation will be calculated by the program based on the elevations and depths of the boreholes in the cross-section.

Horizontal Length Scale: This is the horizontal scale to use for the cross-section. When the cross-section is created this scale can be calculated by the program or taken from the template.

Vertical Depth Scale: This is the vertical scale to use for the cross-section. When the cross-section is created this scale can be calculated by the program or taken from the template.

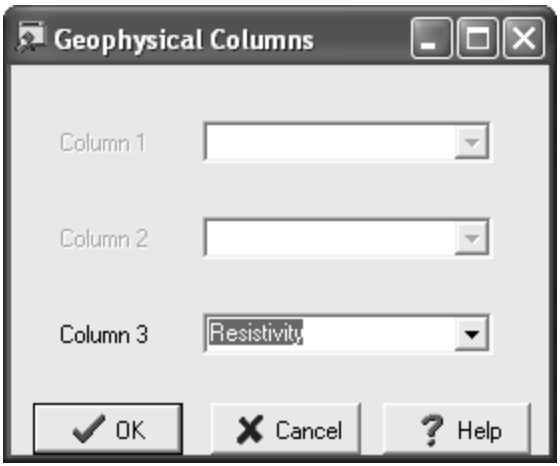
Scale Units: These are the units to use for the horizontal and vertical scales. The units can be m/cm, m/in, ft/cm, or ft/in. They relate real world coordinates with page coordinates. For example if the scale units are m/cm and the scale is 5, then 5m in real coordinates would equal 1 cm on the page.

Borehole/Well Columns

In the template for the cross-section, there can be up to 3 types of data displayed at each borehole or well. If any of the columns are Sample Other, Text, Graph, Bargraph, Double Graph, Geophysical, or Double Geophysical the dataset name can also be specified. This is necessary when the borehole or well logs contain multiple datasets of that type. For example, a well that contains numerous geophysical logs, the dataset name would be used to select which geophysical log to display.

Generally, the type and name of dataset is specified in the template. However, the dataset name can also be specified in the cross-section. If Sample Other, Text, Graph, Bargraph, Double Graph, Geophysical, or Double Geophysical are specified in the template for the borehole or well columns the Edit menu and popup menu will contain menu items for that type of dataset.

For example, if the template specified a borehole/well column to display a geophysical log then the Edit menu and popup menu would contain the menu item Geophysical Log. When this menu item is selected the Geophysical Columns form on the next page is displayed. Using this form the dataset name of the column can be selected. The default dataset name will be the one specified in the template.



Paragraph Text

Floating paragraph text boxes can be added anywhere on a cross-section. These text boxes are displayed over top of any information on the cross-section. There is no limit to the number of paragraph text boxes that can be displayed. Paragraph text boxes are typically used to add comments to a cross-section.

Adding Paragraph Text

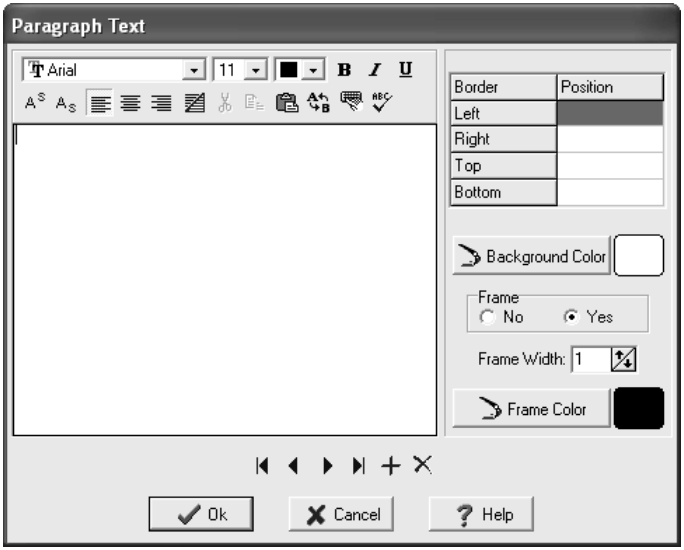
There are two methods that can be used to add a Paragraph Text box:

1. Click on the Paragraph button on the Toolbar. Next click on the location of the upper left corner of the paragraph text box. Then while holding the left mouse button down drag the mouse to the location of the lower right corner. After the button has been released, the Paragraph Text form shown in the section below will be displayed.

2. Select the Paragraph Text menu item from the Edit menu or Popup menu and then click on the Add button on the Paragraph Text form. This will create a new paragraph. Using this method, the location of the paragraph must be specified on the form as described below.

Editing Paragraph Text

Existing Paragraph data can be edited by selecting the Paragraph Text menu item of the Edit or Popup menus or by clicking the left mouse button inside the paragraph on the template. The Paragraph Text form below will then be displayed.



The following information can be specified on this form:

Text: This is the text for the paragraph. There is no limit to the length of the text. The Rich Text toolbar at the top of the form is used to format the text. At the top of the Paragraph Text form is the Rich Text toolbar, this toolbar can be used to modify the font characteristics of the text. Before selecting a speed button, the text to be modified should be selected with the mouse.

Left: This is the position of the left border of the paragraph in inches or millimeters from the left side of the page. If the Paragraph button on the toolbar is used to create the paragraph this position will be filled in by the program. The units of measurement are specified in the page layout.

Right: This is the position of the right border of the paragraph in inches or millimeters from the left side of the page.

Top: This is the position of the top border of the paragraph in inches or millimeters from the top of the page.

Bottom: This is the position of the bottom border of the paragraph in inches or millimeters from the top of the page.

Background Color: This is the background color of the paragraph text box. When the Background Color button is pressed a Color form will be displayed. Using this form a basic color can be selected or a custom color can be specified.

Frame: Select "yes" to display a frame around the paragraph text.

Frame Width: This is the line width of the frame around the paragraph text. If no frame is selected above, this field will not be displayed.

Frame Color: This is the color of the frame to display around the paragraph text. When the Frame Color button is pressed a Color form will be displayed. Using this form a basic color can be selected or a custom color can be specified. If no frame is selected above, this field will not be displayed.

Sizing and Moving Paragraph Text

The size and position of the paragraph text can be changed using the Paragraph Text form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the paragraph text, position the mouse in the center of the paragraph and drag it to its new location.

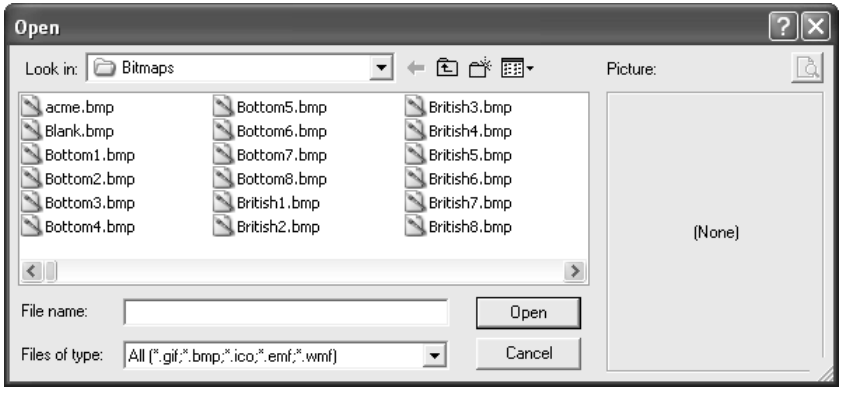
Bitmaps

Bitmaps contained in Windows bitmap (BMP) files can be added anywhere on a cross-section. These bitmaps can be used to show company logos, site plans, legends, and other graphical information. Bitmaps are displayed over top of any information on the cross-section. There is no limit to the number of bitmaps that can be displayed.

Adding Bitmaps

There are two methods that can be used to add a bitmap box to a cross-section:

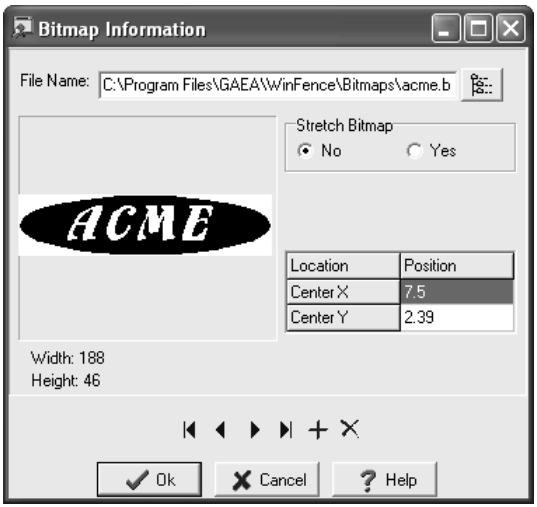
1. Click on the Bitmap button on the Toolbar. Next click on the location of the center of the bitmap. After the button has been released, the Open form shown below will be displayed. Select the bitmap file and then press the Open button.



2. By selecting the Bitmaps menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Open form above will then be displayed. Select the bitmap file and then press the Open button. Using this method, the location of the bitmap must be specified on the Bitmap Information form as described below.

Editing Bitmaps

Existing bitmaps can be edited by selecting the Bitmaps menu item of the Edit or Popup menus or by clicking the left mouse button inside the bitmap on the cross-section. The Bitmap Information form below will then be displayed.



The following information can be specified on this form:

File Name: This is the name of the bitmap file to display on the cross-section. To change the name of the file, edit this name or click on the button to the right of the name. If the button to the right is pressed a Open bitmap file form will be displayed. Select the desired file and then press the Open button.

Stretch Bitmap: Select yes to stretch the bitmap to fit within the specified borders. If "No" is selected, only the center of the bitmap can be entered for the position. If the Bitmap button on the toolbar is used to add the bitmap, Stretch Bitmap is set to "No".

Maintain Aspect Ratio: Select "Yes" to keep the aspect ratio of the bitmap the same as stored in the file. If "Yes" is selected the bottom of the bitmap will be automatically adjusted to maintain the aspect ratio. If Stretch Bitmap is set to "No", then this field will not be displayed and it is assumed that the aspect ratio is maintained.

Left: This is the position of the left border of the bitmap in inches or millimeters from the left side of the page. If the Bitmap button on the toolbar is used to create the bitmap, this field will not be displayed. If Stretch Bitmap is set to “No” then this field will not be displayed. The units of measurement are specified in the page layout.

Right: This is the position of the right border of the bitmap in inches or millimeters from the left side of the page. If the Bitmap button on the toolbar is used to create the bitmap, this field will not be displayed. If Stretch Bitmap is set to “No” then this field will not be displayed.

Top: This is the position of the top border of the bitmap in inches or millimeters from the top of the page. If the Bitmap button on the toolbar is used to create the bitmap, this field will not be displayed. If Stretch Bitmap is set to “No”, then this field will not be displayed.

Bottom: This is the position of the bottom border of the bitmap in inches or millimeters from the top of the page. If the Stretch Bitmap is set to “No” or Maintain Aspect Ratio is set to “Yes”, then this field will not be displayed and the bottom will be calculated by the program.

Center X: This is the bitmap's horizontal center in inches or millimeters from the left side of the page. If Stretch Bitmap is set to “Yes”, this field will not be displayed. If the Bitmap button on the toolbar is used to add the bitmap, this field will be filled in by the program.

Center Y: This is the bitmap's vertical center in inches or millimeters from the left side of the page. If Stretch Bitmap is set to “Yes”, this field will not be displayed. If the Bitmap button on the toolbar is used to add the bitmap, this field will be filled in by the program.

Sizing and Moving Bitmaps

The size and position of the bitmap can be changed using the Bitmap Information form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the bitmap, position the mouse in the center of the bitmap and drag it to its new location.

Lines

Horizontal, vertical, and diagonal lines and arrows can be added anywhere on a cross-section. There is no limit to the number of lines and arrows that can be added.

Adding a Line

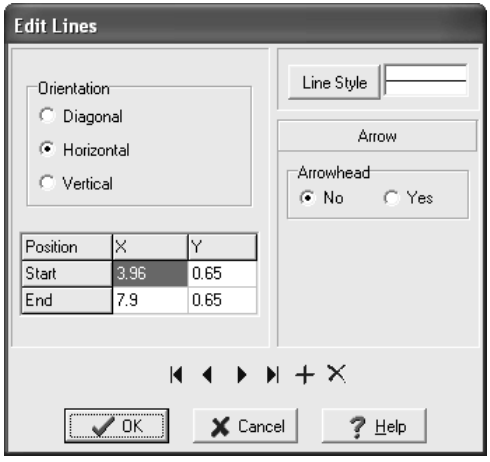
There are two methods that can be used to add a line or arrow to a cross-section:

1. By clicking on the Line button on the Toolbar. Next using the left mouse button click on the location of the starting point of the line or arrow. Then while holding down the left mouse button, drag the cursor to the end of the line or arrow and release the mouse button. The Edit Lines form described in the next section will then be displayed.

2. By selecting the Lines menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Edit Lines form described in the next section will then be displayed. Using this method, the location of the line must be specified on the form.

Editing a Line

Existing lines and arrows can be edited by selecting the Lines menu item of the Edit or Popup menus or by clicking the left mouse button on the start or end point of the line. The Edit Lines form below will then be displayed.



The following information can be entered and edited using this form:

Orientation: This is the orientation of the line, either diagonal, horizontal, or vertical. If the orientation is set to horizontal, the vertical position will be set to the y position of the start of the line. If the orientation is set to vertical, the horizontal position will be set to the x position of the start of the line.

Start X: This is the horizontal position of the start of the line in inches or millimeters from the left side of the page. If the Line button on the toolbar is used to create the line, the program will fill in this field.

Start Y: This is the vertical position of the start of the line in inches or millimeters from the top of the page.

End X: This is the horizontal position of the end of the line in inches or millimeters from the left side of the page.

End Y: This is the vertical position of the end of the line in inches or millimeters from the top of the page.

Line Style: This is the style of the line. The line style can be changed by pressing the Line Style button. A Line Properties form will be displayed. Using this form the style, color, and width of the line can be set.

Arrowhead: To display an arrowhead at the start or end of the line select yes.

Arrow Position: This is position to place the arrowhead, either at the start or end of the line. If no arrowhead is selected above, this field will not appear.

Arrowhead Size: This is the size of the arrowhead. If no arrowhead is selected above, this field will not appear.

Polylines

Polylines (open polygons composed of multiple line segments) can be added anywhere on a cross-section. There is no limit to the number of polylines that can be added.

Adding a Polyline

There are two methods that can be used to add a polyline or arrow to a cross-section:

1. By clicking on the Polyline button on the Toolbar. Next using the left mouse button click on the location of the starting point of the first line segment. Then while holding down the left mouse button, drag the cursor to the end point of the first line segment and release the mouse button. Continue to add the other line segments the same way. After the end point of the last line segment had been added, either click the right mouse button or double clicking the left mouse button. The Edit Polylines form described in the next section will then be displayed.

2. By selecting the Polylines menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Edit Polylines form described in the next section will then be displayed. Using this method, the location of the line must be specified on the form.

Editing a Polyline

Existing polylines can be edited by selecting the Polylines menu item of the Edit or Popup menus or by clicking the left mouse button on the start or end point of one of the line segments. If the start or end point is double-clicked on, the points in the polyline will be drawn with a square box. The points can then be moved using the left mouse button.

If the PolyLine menu item is selected the Edit Polylines form on the next page will be displayed.. The following information can be entered and edited using this form:

Point X: The polyline is composed of a series of line segments between points. This is the horizontal position of the points.

Point Y: This is the vertical position of the points.

Line Style: This is the style of the polyline. The line style can be changed by pressing the Line Style button.

The **Add Point** button is used to add a point to the polyline.

The **Delete Point** button is used to delete a point on the polyline.

At the bottom of the form there are buttons to move to the first polyline, move to the previous polyline, move to the next polyline, move to the last polyline, add a polyline, and delete a polyline.

Rectangles

Rectangles can be added anywhere on a cross-section. There is no limit to the number of rectangles that can be added.

Adding a Rectangle

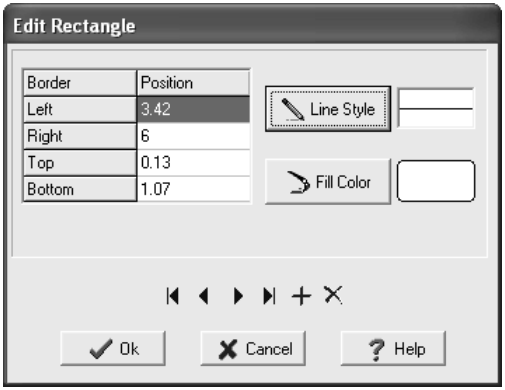
There are two methods that can be used to add a rectangle to a cross-section:

1. By clicking on the Rectangle button on the Toolbar. Next using the left mouse button click on the location of the upper left corner of the rectangle. Then while holding down the left mouse button, drag the cursor to the lower right corner of the rectangle and release the mouse button. The Edit Rectangle form described in the next section will then be displayed.

2. By selecting the Rectangles menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Edit Rectangles form described in the next section will then be displayed. Using this method, the location of the rectangle must be specified on the form.

Editing a Rectangle

Existing rectangles can be edited by selecting the Rectangles menu item of the Edit or Popup menus or by clicking the left mouse button inside the rectangle. The Edit Rectangle form on the next page will then be displayed.



The following information can be entered and edited using this form:

Left: This is the position of the left border of the rectangle in inches or millimeters from the left side of the page. If the Rectangle button on the toolbar is used to create the rectangle, the program will fill in this position. The units of measurement are specified in the page layout.

Right: This is the position of the right border of the rectangle in inches or millimeters from the left side of the page. If the Rectangle button on the toolbar is used to create the rectangle, this position will be filled in by the program.

Top: This is the position of the top border of the rectangle in inches or millimeters from the top of the page. If the Rectangle button on the toolbar is used to create the rectangle, this position will be filled in by the program.

Bottom: This is the position of the bottom border of the rectangle in inches or millimeters from the top of the page. If the Rectangle button on the toolbar is used to create the rectangle, this position will be filled in by the program.

Line Style: This is the style of the rectangle border. The line style can be changed by pressing the Line Style button. A Line Properties form will be displayed. Using this form the style, color, and width of the rectangle can be set.

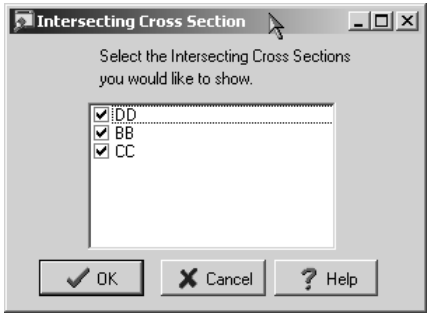
Fill Color: This is the color to use to fill the inside of the rectangle. When the Fill Color button is pressed a Color form will be displayed. Using this form a basic color can be selected or a custom color can be specified.

Sizing and Moving Rectangles

The size and position of a rectangle can be changed using the Edit Rectangle form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the rectangle, position the mouse in the center of the rectangle and drag it to its new location.

Intersecting Cross-Sections

In version 2, intersecting cross-sections are shown on a cross-section similar to the way bore-holes/wells are shown except only the lithologies are displayed. The intersecting cross-sections that are displayed can be selected using the Intersecting Cross-section menu item on the Edit menu and popup menu. When this menu item is selected the Intersecting Cross-section form below will be displayed.



On this form select the intersecting cross-sections to display by clicking on their checkboxes.

Water Levels

Multiple water levels can be drawn on a cross-section. The water levels are represented by a polyline and a static or dynamic water level symbol.

Adding a Water Level

There are two methods that can be used to add a water level to a cross-section:

1. By clicking on the Water Level button on the Toolbar. If this is the first water level and there are water levels in the boreholes on the cross-section, the program will try to draw the water level using the water levels in WinLoG. Otherwise, the water level can be added the same way as a polyline. Click on the location of the starting point of the first line segment. Then while holding down the left mouse button, drag the cursor to the end point of the first line segment and release the mouse button. Continue to add the other line segments the same way. After the end point of the last line segment had been added, either click the right mouse button or double clicking the left mouse button. The Water Level Information form described in the next section will then be displayed.

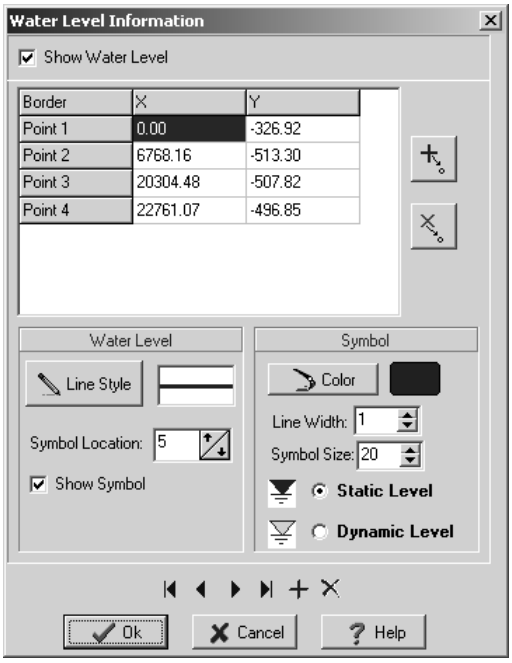
2. By selecting the Water Level menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Water Level Information form described in the next section will then be displayed. Using this method, the location of the line must be specified on the form.

Editing a Water Level

Existing water levels can be edited by selecting the Water Level menu item of the Edit or Popup menus or by clicking the left mouse button on the start or end point of one of the line segments or water level symbol.

If the start or end point of a line segment is double-clicked on, the points in the water level will be drawn with a square box. The points can then be moved using the left mouse button. If the water level symbol is clicked on, the position of the symbol on the polyline can be moved using the mouse.

If the Water Level menu item is selected the Water Level Information form on the next page will be displayed..



The following information can be entered and edited using this form:

Show Water Level: Check to show this water level on the cross-section.

Point X: The water level is composed of a series of line segments between points. This is the horizontal position of the points.

Point Y: This is the vertical position of the points.

Line Style: This is the style of the water level. The line style can be changed by pressing the Line Style button.

Symbol Location: This is the location of the water level symbol on the polyline. It is expressed as a percentage of the distance from left to right of the cross-section. So that 25% would put the symbol one quarter from the left side of the cross-section.

Show Symbol: Check to display the water level symbol.

Symbol Color: This is the color of the water level symbol. Press the color button to change the color.

Symbol Line Width: This is the width of the line used to draw the water level symbol.

Symbol Size: This is the relative size of the water level symbol.

Symbol Type: This selects whether to draw the symbol as a static water level (shaded triangle) or dynamic water level (hollow triangle).

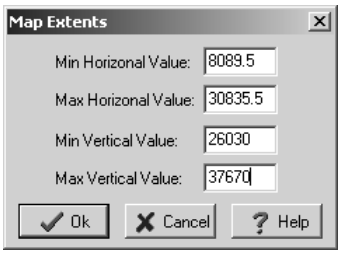
The **Add Point** button is used to add a point to the water level.

The **Delete Point** button is used to delete a point on the water level.

At the bottom of the form there are buttons to move to the first water level, move to the previous water level, move to the next water level, move to the last water level, add a water level, and delete a water level.

Location Map

The map extents of the location map at the bottom of the cross-section can be adjusted using the Location Map menu item on the Edit or Popup menus. When this menu item is selected, the Map Extents form below is displayed.



The following information can be edited on this form:

Min. Horizontal Value: This sets the left boundary of the map extents to be displayed.

Max. Horizontal Value: This sets the right boundary of the map extents to be displayed.

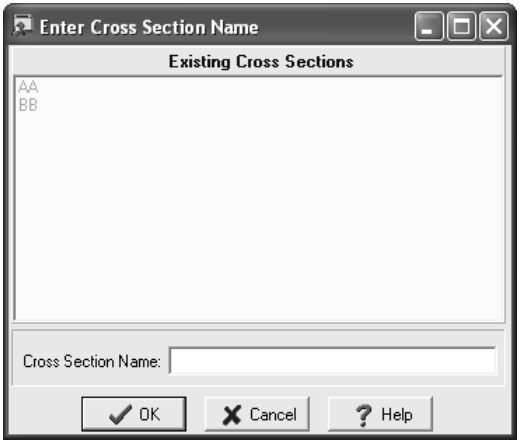
Min. Vertical Value: This sets the lower boundary of the map extents to be displayed.

Max. Vertical Value: This sets the upper boundary of the map extents to be displayed.

Saving a Cross Section

To save the cross-section either select the Save Cross Section menu item from the File menu or click on the Save button on the Cross Section toolbar.

The cross-section can also be saved under a new name by selecting the SaveAs button on the Cross Section toolbar. The Enter Cross Section Name form below will be shown. Enter a unique name for the cross-section and then press the Ok button.

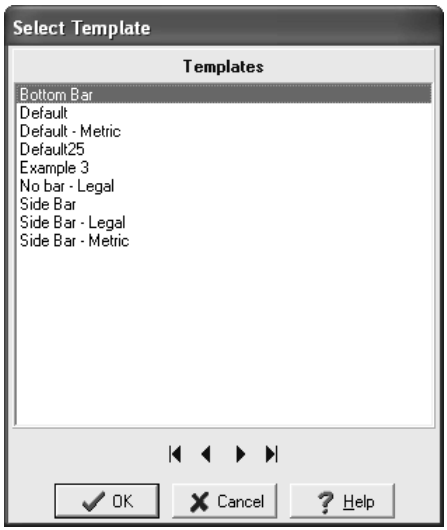


Printing a Cross-Section

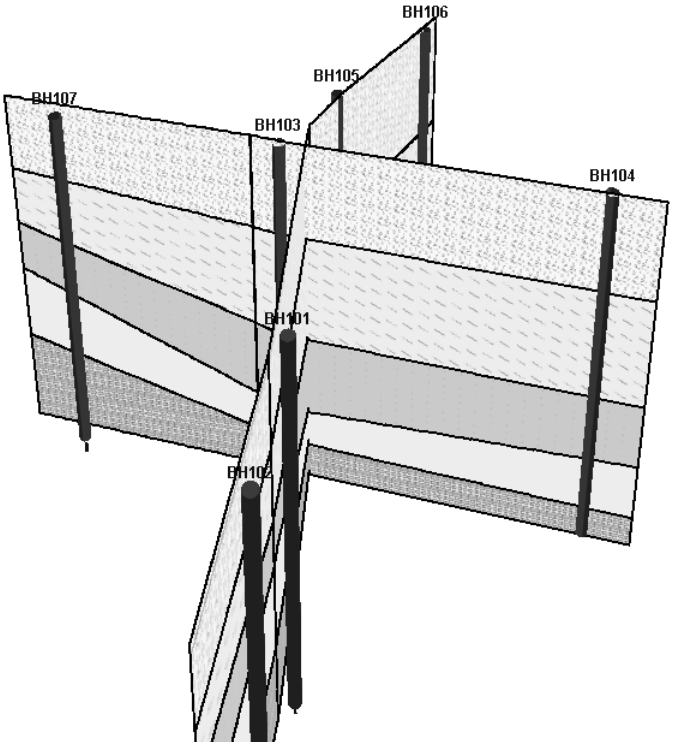
To print the cross-section either select the Print menu item from the File menu or click the Print button on the Cross Section toolbar.

Changing the Template

A different template can be selected for the cross-section using the Change Template button on the Cross Section toolbar. The form below will be displayed. This form lists the currently available templates. Select the desired template and then press the Ok button.



5. Fence Diagrams



5. Fence Diagrams

In version 2 of WinFence, fence diagrams can now be displayed and manipulated. Fence diagrams are used to depict the geology and stratigraphy of the subsurface in 3 dimensions. Typically, fence diagrams show several cross-sections that may intersect as well as boreholes and wells.

The WinLoG program can be used to create and edit all types of boring and well logs. The logs can contain general borehole data ; lithologic descriptions and symbols for each layer; sample data; well completion details; water level measurements; geophysical logs; and numerous graphs and text columns.

WinFence can be used to graphically create detailed, full-color, cross-sections easily and quickly. The program can be used to interpret and map soil and rock layers, contamination, fossils, minerals and hydrocarbons. See Chapter 4 for a detailed description on how to create and edit cross-sections.

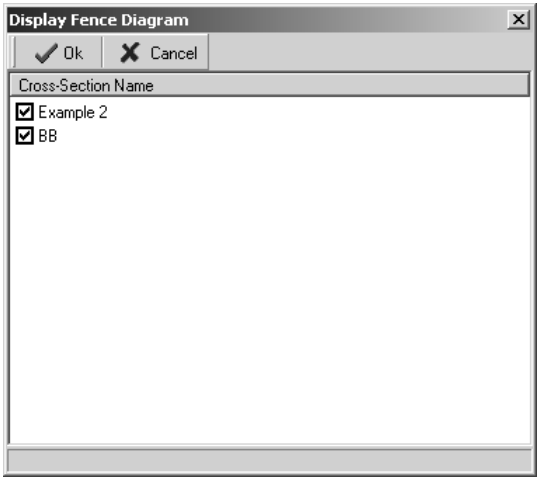
This chapter describes how to:

1. Create a fence diagram
2. Modify the display
3. Print the fence diagram
4. Save the fence diagram display
5. Close a fence diagram

Creating a Fence Diagram

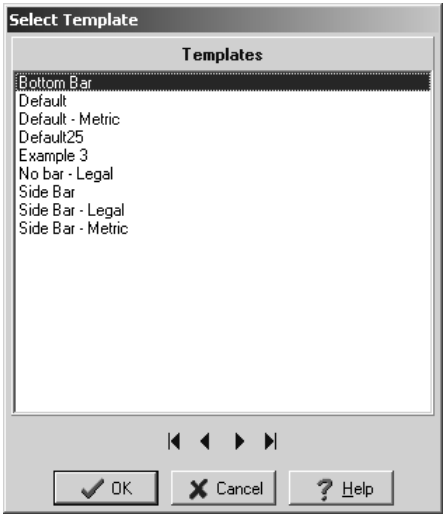
Fence diagrams are used to depict the geology and stratigraphy of the subsurface in three dimensions. Typically, fence diagrams show several cross-sections that may intersect as well as boreholes and wells. Before a fence diagram can be displayed, the cross-sections must e created using the information from the boring and well logs. See Chapter 4 for a detailed description on how to create and edit cross-sections.

After one or more cross-sections have been created it is very easy to create and display a fence diagram for the project. Either click on the Fence Diagram button on the Project toolbar or select the Fence Diagram menu item from the View menu. The Display Fence Diagram form below will be displayed.



This form is used to select which cross-sections to display in the fence diagram, at least one cross-section must be selected. By default, all of the cross-sections are selected. After the cross-sections have been selected and the Ok button pressed the Select Template form on the next page will be displayed.

The Select Template form is used to select the template to format the fence diagram. The template can be the same as the cross-sections or one setup specifically for the fence diagram. After the template has been selected the fence diagram will be displayed.

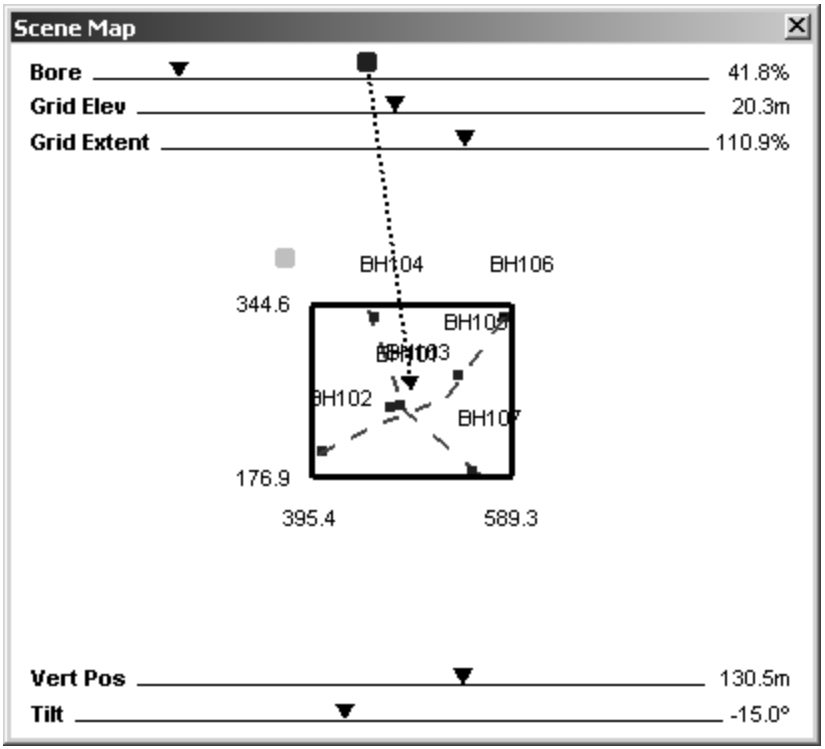


The template selected will be remembered by the program and the next time the fence diagram is displayed the Select Template form will not be displayed.

When the fence diagram is displayed, the Fence Diagram (FD) toolbar below will also be displayed. The buttons on this toolbar are described in the appropriate sections below.

Modifying the Display

The display of the fence diagram can be modified dynamically in several ways. It can be zoomed, rotated, re-positioned, the light source can be altered, the grid can be changed, etc. All of these modifications are done using the Scene Map of the fence diagram. To display the Scene Map click on the Scene Map button on the Toolbar. The Scene Map will be displayed, an example of one is shown below.The area of the fence diagram is represented by the rectangular box in the center of the map.



This map is used to control the position of the camera(s) and light source(s), size and position of the grid, and size of the boreholes relative to the fence diagram. The use of these controls and the ones on the FD toolbar are described below.

Using Cameras

In this application, cameras represent the user in 3D space and are used to view the fence diagram from various positions and angles. There can be one or more cameras in 3D space, with each camera represented by a solid square on the Scene Map. The currently active camera is shown in blue and the remaining cameras are shown in black. To switch between cameras double click on them on the Scene Map. When a camera is selected it will turn red with cross-hairs, it can then be positioned as described in the sections below.

Adding a Camera

To add a new camera to the Scene Map, click on the Add Camera button on the Fence Diagram toolbar. The camera will be added to the Scene Map at the top left and made the active camera.

Removing a Camera

To remove a camera from the Scene Map, first select the camera by double clicking on it and then click on the Remove Camera button on the Fence Diagram toolbar.

Positioning Cameras

The position and angle of the camera control how the fence diagram is viewed. There are three components to the position of the camera (user); horizontal, vertical, and the tilt of the camera (user's head).

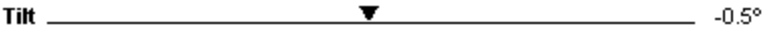
The horizontal position can be adjusted by clicking on the camera to make it the active camera and them moving it with the mouse. When the camera is the active camera it will become red with red cross-hairs. As the camera is moved away from the fence diagram, the fence diagram will become smaller and the opposite will happen when it is moved towards the fence diagram.

The vertical position and tilt of the camera are controlled by two sliders at the bottom of the Scene Map. The use of these sliders is described below.

Using the Vert Pos Slider

The vertical position of the camera (user) is controlled by the Vert Pos slider at the bottom of the Scene Map. To adjust the vertical position, click on the slider triangle and move it left (for down) or right (for up). On the right side of the slider the vertical position of the camera in template units above (positive) or below (negative) sea level is indicated.

Using the Tilt Slider



The tilt or angle of the camera (user's head) is controlled by the Tilt slider at the bottom of the Scene Map. To adjust the tilt, click on the slider triangle and move it to the left (to look down) or to the right (to look up). On the right side of the slider the tilt angle is indicated, positive for up and negative for down.

Using a Light Source

Shading can be enabled on the fence diagram, by clicking on the Light Source button on the Fence Diagram toolbar. When the button is clicked, the light source, represented on the Scene Map as a small light blue rectangle, will be activated. The position of the light source can be adjusted by clicking on the rectangle and moving it. As the rectangle is moved the light source on the fence diagram will be adjusted.

To turn off the light source, click on the Light Source button again on the Fence Diagram toolbar.

Changing the Borehole Size

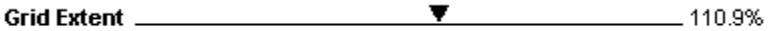
The size (diameter) of the boreholes/wells cab on the fence diagram can be adjusted using the Bore Slider on the Scene Map. To adjust the size, click on the slider triangle and slide it to the left to make them smaller and to the right to make them larger.

The color and outline of the boreholes can be changed in the Preferences of the program, see Chapter 3.

Changing the Grid Elevation

The elevation of the horizontal grid can be adjusted using the Grid Elev Slider on the Scene Map. To adjust the elevation, click on the slider triangle and move it to the left to move the grid elevation down and to the right to move the grid elevation up. On the right side of the slider the elevation of the grid is indicated (negative below sea level and positive above sea level).

Changing the Grid Extent



The extent of the horizontal grid can be adjusted using the Grid Extent Slider on the Scene Map. To adjust the extent, click on the slider triangle and move it to the left to decrease the extent and to the right to increase the extent. On the right side of the slider the grid extent as a percentage of the fence diagram extent is shown.

Zooming-In

To zoom-in on the Scene Map, click on the Zoom-In button on the Fence Diagram toolbar. As you zoom-in the square outlining the grid on the Scene Map should get larger. After you have zoomed-in, you can adjust the camera more finely within the grid square to zoom-in on the fence diagram.

The fence diagram itself will not zoom-in unless you move the current camera closer to the center of the Scene Map.

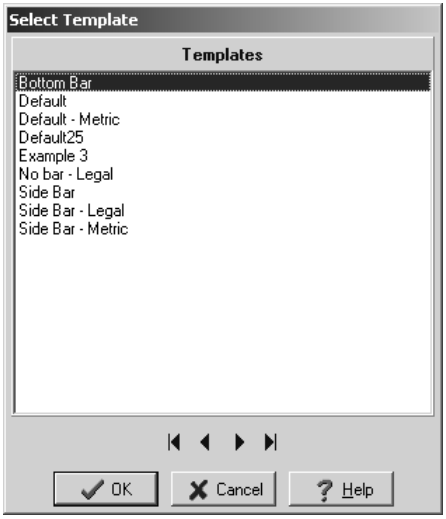
Zooming-Out

To zoom-out on the Scene Map, click on the Zoom-Out button on the Fence Diagram toolbar. As you zoom-out the square outlining the grid on the Scene Map should get smaller. After you have zoomed-out, you can adjust the camera to a position farther away from the grid square to zoom-out on the fence diagram.

The fence diagram itself will not zoom-out unless you move the current camera farther from the grid square on the Scene Map.

Changing the Template

The template used to format and print the fence diagram is initially selected when the fence diagram is created, it can be changed by clicking on the Change Template button on the Fence Diagram toolbar. The Select Template form below will be displayed, select the template to use and then click the Ok button.



Printing a Fence Diagram

To print the fence diagram click on the Print button on the Fence Diagram toolbar.

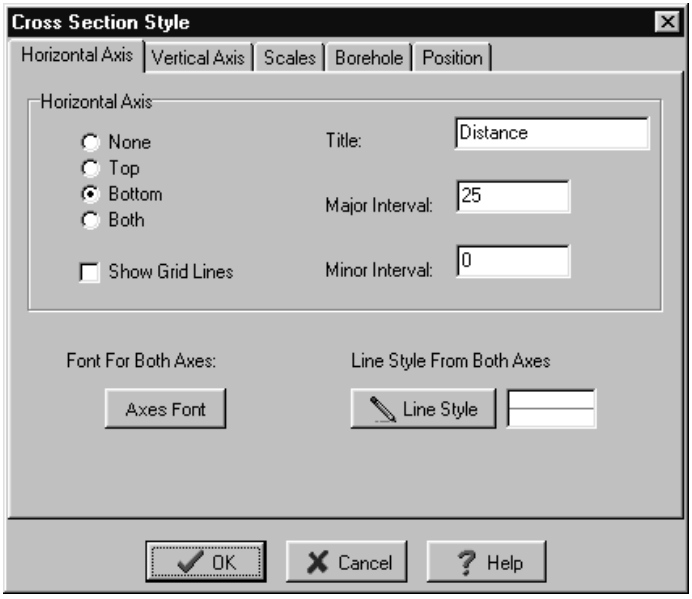
Saving a Fence Diagram Display

The display settings for the fence diagram are automatically saved by the program when the fence diagram is closed. However, these settings can be reset back to the default settings by clicking on the Reset button on the Fence Diagram toolbar.

Closing a Fence Diagram

To close the fence diagram, click on the Close button on the Fence Diagram toolbar.

6. Templates


Cross Section Style
Horizontal Axis
Vertical Axis
Scales
Borehole
Position
Horizontal Axis
None
Top
Bottom
Both
Show Grid Lines
Title:
Distance
Major Interval:
25
Minor Interval:
0
Font For Both Axes:
Axes Font
Line Style From Both Axes
Line Style
OK
Cancel
Help

6. Templates

Templates are used to control the layout and formatting of the cross-section. In general, all of the cross-sections in a project would use one or two templates. In this way, a consistent format can be established within a project and across projects. Once a template is created it is available to all projects.

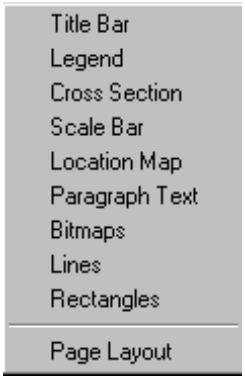
WinFence comes with numerous easily customized templates, which can be edited and saved as new templates. You can also create a new template by specifying the desired layout. Each template consists of a title bar, legend, cross-section, location map and scale bar. The location map and scale bar are optional. Templates can also contain paragraph text, bitmaps, lines, arrows, and rectangles.

Templates are stored in the WinFence master database. The format of the master database is Microsoft Access 2000. This database is stored in the Main Database Directory. For a detailed discussion of the database structure, see Database Structure in Appendix B.

This chapter describes how to:

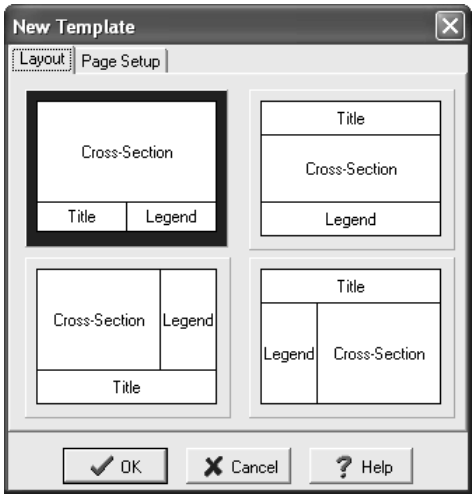
1. Create a new template
2. Open a template
3. Edit a template
4. Save a template
5. Delete a template
6. Set a password for the template

These tasks can be performed using menu commands on the Edit menu or buttons on the Template.

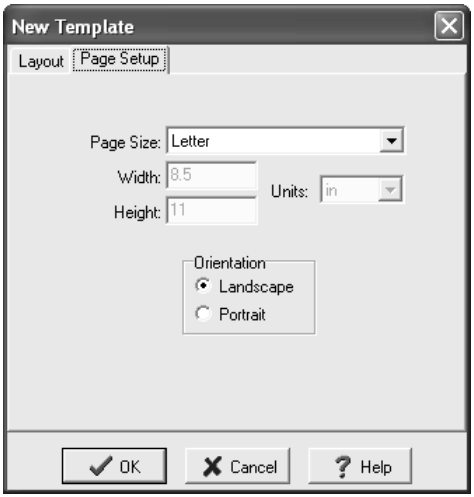


Creating a New Template

Since templates are stored in the WinFence master database, they can be created and edited at any time (no project has to be open). To create a template either select the New Template menu item of the File menu or click the New button on the Template Toolbar. The New Template Name form shown below will be displayed.



This form has two tabs for specifying the layout and page setup of the template. The Layout tab is used to select the location of the cross-section, title bar and legend. To select a layout click on the button containing the layout, the selected layout will be highlighted in blue.



The Page Setup tab shown above is used to specify the following parameters:

Page Size: This sets the page size for the template. When the arrow at the right is pressed, a list of available paper types will be displayed.

Width: If the page size is specified as "custom" the horizontal width of the page in inches or millimeters must be specified. This field is dimmed if the page size is not "custom".

Height: If the page size is specified as "custom" the vertical height of the page in inches or millimeters must be specified. This field is dimmed if the page size is not "custom".

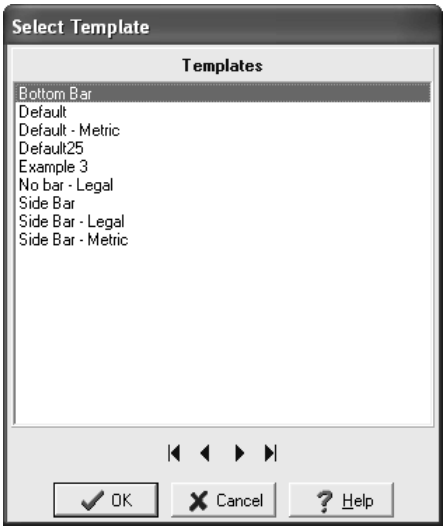
Units: This is the units for the width and height of the page. If the page size is "custom" the units can be set to either inches or millimeters.

Orientation: This is the orientation of the page and can be either portrait (longer side is vertical) or landscape (longer side is horizontal).

After the above parameters have been specified and the Ok button pressed, a blank template with the selected layout will be displayed. The name of the new template will need to be entered when it is saved.

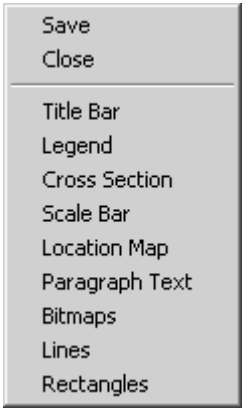
Opening a Template

Existing templates can be opened for editing by selecting the Open Template menu item of the File menu or clicking the Open button on the Template Toolbar. The template to be opened can then by selected from the Open Template form shown below.



Editing a Template

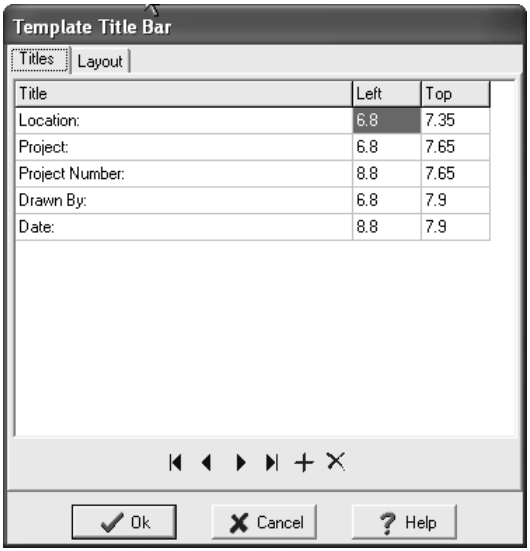
After the template has been created or opened it can be edited using the menu commands on the Edit menu or popup menu. The layout and design of the template is very flexible.



Title Bar

The title bar of the template is used to display general information about the cross-section. This can include information such as project name, location, date, client name, etc. There is no limit to the number of data items that can be displayed.

To edit the Title Bar either click on the title bar or select the Title Bar menu item from the Edit or Popup menu. The Template Title Bar form below will be displayed. This form has two tabs, one for the Titles and one for the Layout.



Titles Tab

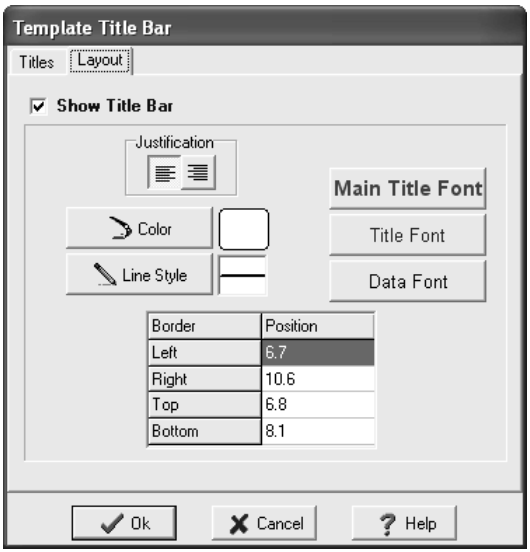
The following information can be entered in the Titles tab:

Title: This the title to display for the data item (up to 100 characters). The data item will be displayed on the same line next to the title on the Title Bar. The title will also be used to prompt for information when entering data for the cross-section. The first title in the Title Bar has its own font that is specified in the Layout tab. This line is usually used for the cross section name.

Left: This is the horizontal position of the title in inches or millimeters from the left side of the page. The units of measurement are specified in the page layout. If the titles are left justified (specified in the Layout tab) the title will start at this position. If the titles are right justified the title will end at this position.

Top: This is the vertical position of the title in inches or millimeters from the top of the page. The units of measurement are specified in the page layout.

Layout Tab



The Layout tab shown above is used to specify the following information:

Show Title Bar: Check to show the Title Bar. If unchecked no Title Bar will be displayed and the information below will not be displayed.

Justification: This sets the justification of the titles and can be either left or right.

Color: This is the background color of the Title Bar. When the Color button is pressed a Color form will be displayed. Using this form either a basic or custom color can be selected.

Line Style: This is the style of line used to draw the border around the Title Bar. When the Line Style button is pressed the Line Properties form will be displayed. This form can be used to set the line style, color, and width.

Main Title Font: This is the font used for the first title and data item of the Title Bar. When the Main Title Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, and color of the font.

Title Font: This is the font used for the titles (except the first) of the Title Bar. When the Title Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, and color of the font.

Data Font: This is the font used for the data items (except the first) of the Title Bar. When the Title Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, and color of the font.

Left: This is the position of the left border of the Title Bar in inches or millimeters from the left side of the page. The units of measurement is specified in the page layout.

Right: This is the position of the right border of the Title Bar in inches or millimeters from the left side of the page. The units of measurement is specified in the page layout.

Top: This is the position of the top border of the Title Bar in inches or millimeters from the top of the page. The units of measurement is specified in the page layout.

Bottom: This is the position of the bottom border of the Title Bar in inches or millimeters from the top of the page. The units of measurement is specified in the page layout.

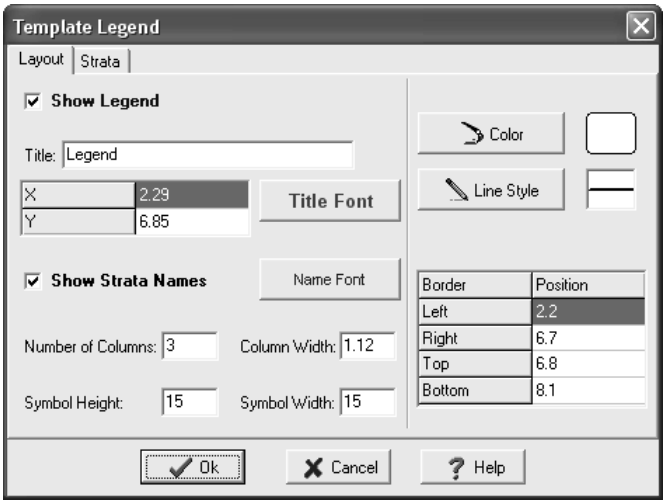
Sizing and Moving the Title Bar

The size and position of the title bar can be changed using the Template Title Bar form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the title bar position the mouse in the center of the title bar and drag it to its new location.

Legend

The legend is used to display the strata used in the cross-section and their descriptions. The layout and initial strata to include in the legend can be specified in the template. Additional strata can be added to the legend after the cross-section is created.

To edit the legend either click on the legend or select the Legend menu item from the Edit or Popup menu. The Template Legend form on the next page will be displayed. This form has two tabs, one for the Layout and one for the Strata.



Layout Tab

The following information can be specified on the Layout tab shown above:

Show Legend: Check to show the legend on the page. If not checked no legend will be shown and the information below will not be displayed.

Title: This is the optional title of the legend (up to 255 characters).

Title X: This is the horizontal position of the title in inches or millimeters from the left side of the page. The units of measurement are set in the page layout.

Title Y: This is the vertical position of the title in inches or millimeters from the top of the page.

Title Font: This is the font to use for the legend title. When the Title Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, and color of the font.

Show Strata Names: Check to show the names of the strata in the legend as well as their descriptions.

Strata Font: This is the font to use for the strata names. When the Strata Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, and color of the font.

Number of Columns: The number of columns of strata in each row of the legend.

Column Width: This is the width of each column in inches or millimeters. The units of measurements are set in the page layout.

Symbol Height: The height of the strata symbols in pixels.

Symbol Width: The width of the strata symbols in pixels.

Color: This is the background color of the legend. When the Color button is pressed a Color form will be displayed. This form can be used to select either a basic or custom color.

Line Style: This is the style of line used to draw the border around the Legend. When the Line Style button is pressed the Line Properties form will be displayed.

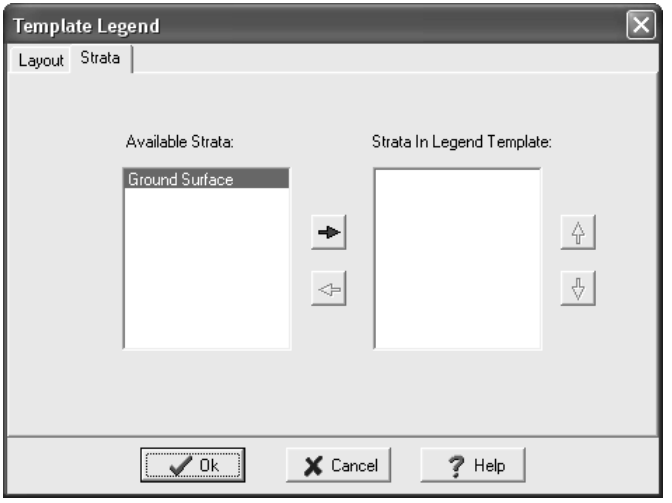
Left: This is the position of the left border of the legend in inches or millimeters from the left side of the page. The units of measurement is specified in the page layout.

Right: This is the position of the right border of the legend in inches or millimeters from the left side of the page.

Top: This is the position of the top border of the legend in inches or millimeters from the top of the page.

Bottom: This is the position of the bottom border of the legend in inches or millimeters from the top of the page.

Strata Tab



The Strata tab shown above is used to specify the following information:

Available Strata: This lists the available strata in the master WinFence database that can be included in the legend.

Strata in Legend Template: This lists the strata currently included in the legend. Additional strata can be added after the cross-section is created.

The **Right** arrow is used to add the selected strata to the legend.

The **Left** arrow is used to remove the selected strata from the legend.

The **Up** arrow is used to move the selected strata up in the legend. The order of the strata in the list will determine the order they are displayed in the legend.

The **Down** arrow is used to move the selected strata down in the legend.

Sizing and Moving the Legend

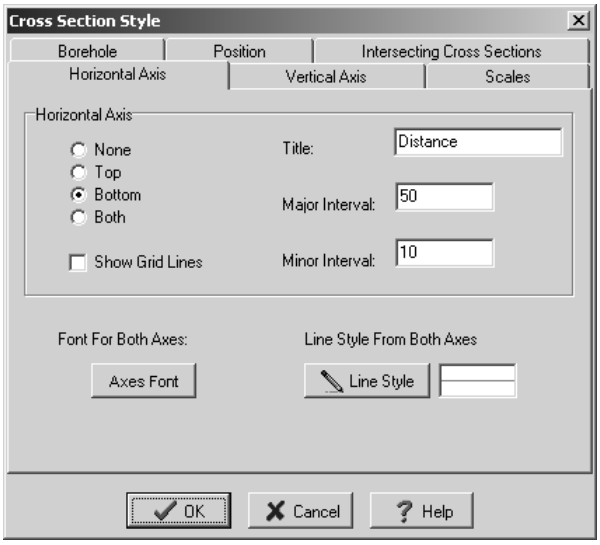
The size and position of the legend can be changed using the Template Legend form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the legend, position the mouse in the center of the legend and drag it to its new location.

Cross-Section

The style of the cross-section is specified in the Cross-Section style form. This form is used to specify the horizontal and vertical axes, scales, position of the cross-section on the page, and the data to be displayed from the borehole logs.

To edit the style of the cross-section either click on the cross-section or select the Cross Section menu item from the Edit or Popup menu. The Cross Section style form on the next page will then be displayed. This form has six tabs for the Horizontal Axis, Vertical Axis, Scales, Borehole, Position d Intersecting Cross Sections.

Horizontal Axis Tab



The Horizontal Axis tab shown above can be used to specify the following information:

Horizontal Axis: This is used to specify which horizontal axes to draw. It can be set to none, top only, bottom only, or both.

Show Grid Lines: If checked vertical grid lines will be at the specified major interval.

Title: This is the optional title to use for the axis (up to 255 characters).

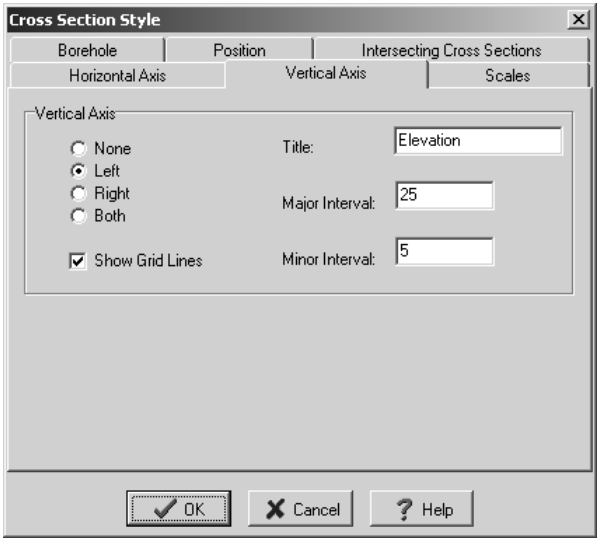
Major Interval: The major interval determines the interval between grid lines and axis labels. The interval is specified in the same units specified in the Scales tab.

Minor Interval: This is the tic interval along the axis.

Axes Font: This is the font to use to draw the horizontal and vertical axes titles and labels. When the Axes Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, color, and style of the font.

Line Style: This is the line style to use for the grid lines. When the Line Style button is pressed a Line Properties form will be displayed. This form can be used to select the width, color, and style of the line.

Vertical Axis Tab



The Vertical Axis tab shown above is used to enter the following information:

Vertical Axis: This is used to specify which vertical axes to draw. It can be set to none, left only, right only, or both.

Show Grid Lines: If checked horizontal grid lines will be at the specified major interval.

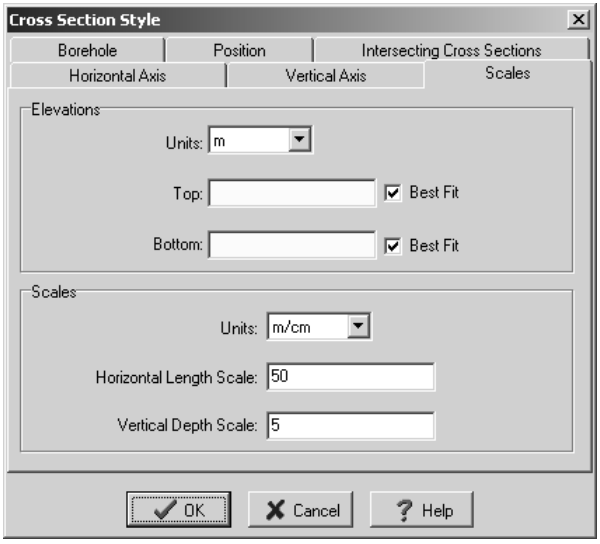
Title: This is the title to use for the axis (up to 255 characters).

Major Interval: The major interval determines the interval between grid lines and axis labels. The interval is specified in the same units specified in the Scales tab.

Minor Interval: This is the tic interval along the axis.

Scales Tab

The Scales tab shown on the next page is used to specify the following information:



Elevation Units: These are the units to use when specifying the top and bottom elevations. The units can be either meters or feet.

Top Elevation: This is the top elevation of the cross-section. The elevation can be specified or the best fitting elevation used. The best fit elevation is determined from the boreholes used in the actual cross-section and may vary for each cross-section.

Bottom Elevation: This is the bottom elevation of the cross-section. The elevation can be specified or the best fitting elevation used. The best fit elevation is determined from the boreholes used in the actual cross-section and may vary for each cross-section.

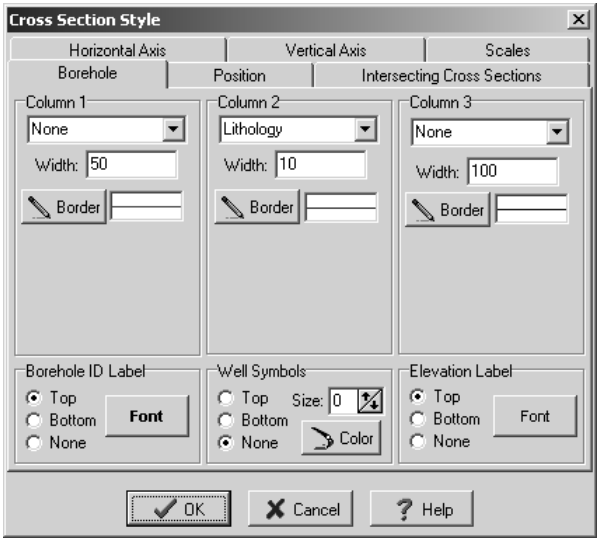
Scale Units: This is the units to use for the horizontal and vertical scales of the cross-section. The units can be either m/cm, m/in, ft/cm, or ft/in.

Horizontal Length Scale: This is the horizontal scale of the cross-section. It relates real world coordinates with page coordinates. For example if the scale units are m/cm and the scale is 5, then 5m in real coordinates would equal 1 cm on the page. The vertical and horizontal scales can also be adjusted when editing a cross-section to make sure that all the data fits on the page.

Vertical Depth Scale: This is the vertical scale of the cross-section. The vertical and horizontal scales do not need to be the same. Typically, cross-sections have some degree of vertical exaggeration.

Borehole Tab

Up to three vertical columns containing borehole data can be displayed on the cross-section at the location of each borehole. This data is retrieved from the WinLoG database for the project when the cross-section is created.



The Borehole tab shown above is used to enter the following information:

Column 1: This is the type of borehole data to display in the first column. To select the type of data click on the arrow at the right. The data can be either none, lithology, graph, bar graph, double graph, geophysical log, double geophysical log, well, sample type, SPT, water content, or a bar. If the data type is specified as a bar, a vertical bar will be drawn at the location of the column using the color of the border line.

Column 2: This is the type of borehole data to display in the second column. To select the type of data click on the arrow at the right.

Column 3: This is the type of borehole data to display in the third column. To select the type of data click on the arrow at the right.

Width: This is the width of either column 1, 2, or 3 specified in the same coordinates as the scales. For example, if the horizontal scale is 5 m/cm, a column width of 10 would be 2 cm wide on the page.

Border: This is the style of the line used to draw the border around either column 1, 2, or 3. When the Border button is pressed a Line Properties form will be displayed. This form can be used to specify the line width, color, and style.

Name: When the column data type is specified as graph, well, or geophysical log the name is used to specify which data to plot in the column. This is useful when the borehole logs contain multiple graphs, wells, or geophysical logs and you want to specify which one will be plotted. If the name is left blank the first graph, well, or geophysical log in the borehole will be plotted. If the column data type is double graph or double geophysical log, there will be two name fields. One for the first graph or log and one for the second graph or log. When specifying the Name it must match exactly what is in WinLoG.

Borehole ID Label: This is used to specify the position of the borehole ID labels on the cross-section. The labels can be placed at either the top, bottom, or not at all.

Borehole Font: This is the font to use for the borehole ID labels. When the Borehole Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, color, and style of the font.

Well Symbols: This is used to specify the position of the well symbols for the boreholes on the cross-section. The symbols can be placed at either the top, bottom, or not at all.

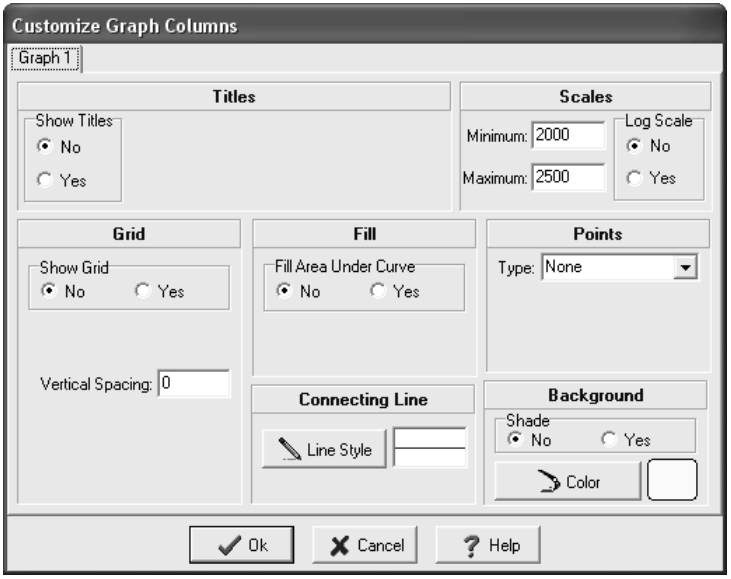
Well Symbol Size: This the size to use for the well symbols. Typically between 10 and 20.

Well Symbol Color: This is the color to use for the well symbols. When the Color button is pressed a Color form will be displayed. This form can be used to select a basic color or custom color.

Elevation Label: This is used to specify the position of the borehole elevation label. The labels can be placed at either the top, bottom, or not at all.

Elevation Font: This is the font to use for the elevation.

Customize Graph: If the column data type is graph, double graph, geophysical log, or double geophysical log the Customize Graph button will be displayed. This button is used to specify the format of the graph in the column. When the Customize Graph button is pressed the Customize Graph Columns form on the next page will be displayed.



If the column type is a double graph or double geophysical log, then the Customize Graph Columns form will have two tabs. Each tab is used for one of the graphs or geophysical logs. The data entry for both tabs is identical

The Customize Graph Columns form can be used to specify the following parameters:

Graph Title: This is the title to use for the graph (up to 255 characters). The Graph Title will be displayed at the top of the column. If the column type is a double graph or double geophysical log, then both Graph Titles will be displayed at the top of the column.

Units Title: This is the units of the graph (up to 255 characters). The unit title will be displayed below the graph title.

Minimum Scale: This is the minimum value for the horizontal axis of the graph. If the value is zero, the program will calculate the minimum value based on the data specified.

Maximum Scale: This is the maximum value for the horizontal axis of the graph. If the value is zero, the program will calculate the maximum value based on the data specified.

Log Scale: The horizontal axis can have either a linear or a logarithmic scale.

Show Grid: To draw horizontal and vertical grid lines, set Show Grid to yes.

Horizontal Spacing: This is the horizontal spacing of the grid lines. If set to zero no grid lines will be displayed.

Vertical Spacing: This is the vertical spacing of the grid lines. If set to zero no grid lines will be displayed.

Grid Line Style: This is the line style to use to draw the grid. When the Line Style button is pressed a Line Properties form will be displayed. This form can be used to set the line style, width, and color.

Fill Area Under Curve: The curve formed by the graph points can be filled with a solid color. The fill will be between the left side of the column and the curve.

Fill Color: This is the color to use for the fill. When the Color button is pressed a Color form will be displayed. This form can be used to select a basic or custom color. If Fill Area Under Curve is set to "no", this field will not appear.

Connecting Line Style: The data points for the graph can be connected by a line. To change the line style press the Line Style button, a Line Properties form will be displayed. This form can be used to select the line style, width, and color. If the line style is set to "none" no line will connect the points.

Point Type: The graph data can be shown as circles, crosses, squares, squares, triangles, or inverted triangles. To not show the data points, select "none". If this is a Bargraph column the point type is set to "none" and this field will not appear.

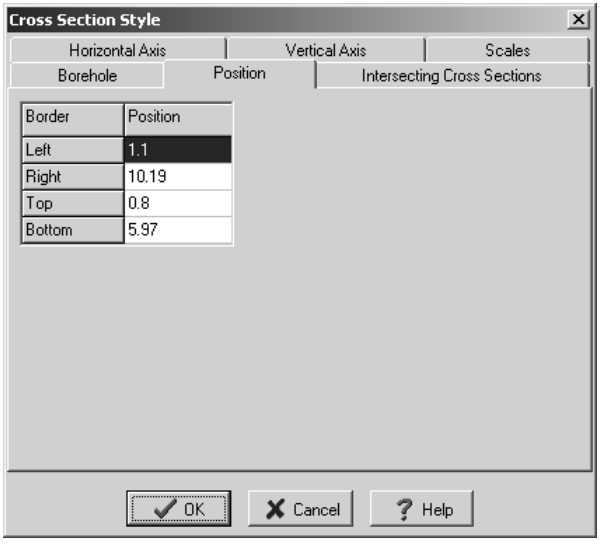
Point Size: This is the size of the data points. If the Point Type is set to “"none” this field will not appear.

Point Color: This is the color of the data points. To change the color, press the Color button, a Color form will be displayed. This form can be used to select a basic color or a custom color. If the Point Type is set to "none" this field will not appear.

Background Shade: This is used to specify whether the background behind the graph will be shaded or transparent. If the background is not shaded the cross-section strata will appear behind the graph.

Background Color: This is the color to shade the background. When the Background Color button is pressed, a Color form will be displayed. This form can be used to select a basic or custom color.

Position Tab



The Position tab shown above is used to specify the following information:

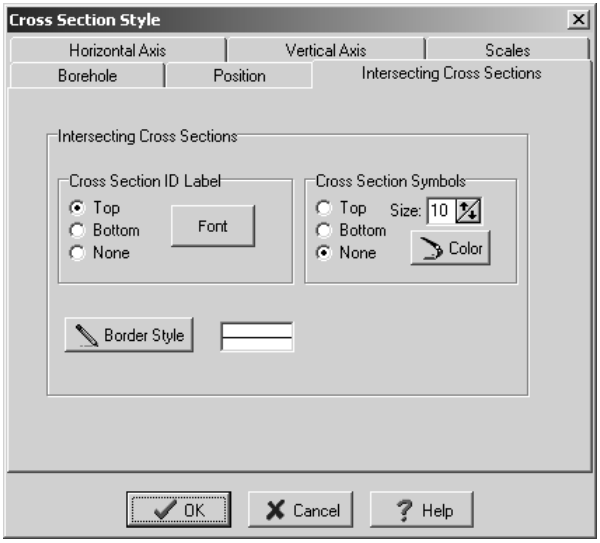
Left: This is the position of the left border of the cross-section in inches or millimeters from the left side of the page. The units of measurement is specified in the page layout.

Right: This is the position of the right border of the cross-section in inches or millimeters from the left side of the page. The units of measurement is specified in the page layout.

Top: This is the position of the top border of the cross-section in inches or millimeters from the top of the page. The units of measurement is specified in the page layout.

Bottom: This is the position of the bottom border of the cross-section in inches or millimeters from the top side of the page. The units of measurement is specified in the page layout.

Intersecting Cross Sections Tab



The Intersecting Cross Sections tab shown above is used to specify the following information:

Cross Section ID Label: This determines t he placement of the intersecting cross-section ID as either on top, below, or none. The Font button is used to change the font for the ID.

Cross Section Symbols: This determines the placement of the intersecting cross-section symbols as either on top, below, or none. The size and color of the symbols can also be changed.

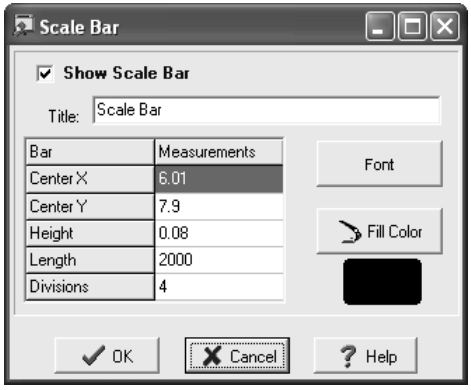
Border Style: This is the style of the line used to draw the border around the intersecting cross-section. When the Border button is pressed a Line Properties form will be displayed. This form can be used to specify the line width, color, and style.

Sizing and Moving the Cross Section

The size and position of the cross-section can be changed using the Cross Section Style form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the cross-section, position the mouse in the center of the cross-section and drag it to its new location.

Scale Bar

The cross-section can contain an optional scale bar that graphically depicts the horizontal scale. This scale bar can be customized and positioned anywhere on the page. To edit the position and style of the scale bar select the Scale Bar menu item from the Edit or Popup menu. The Scale Bar form shown below will then be displayed.



The following information can be specified on the Scale Bar form:

Show Scale Bar: Check to show the scale bar on the page. If unchecked the information below will not be displayed.

Title: This is the title to use above the scale bar (up to 255 characters).

Center X: This is the horizontal location of the center of the scale bar from the left side of the page in inched or millimeters. The measurement units are specified in the page layout.

Center Y: This is the vertical location of the center of the scale bar from the top of the page in inched or millimeters. The measurement units are specified in the page layout.

Length: This is the horizontal length of the scale bar in the same units as the horizontal scale of the cross-section.

Divisions: This is the number of divisions to show on the scale bar. The color of the scale bar will alternate between divisions.

Font: This is the font to use for the scale bar title. When the Font button is pressed a Font form will be displayed. This form can be used to select the type face, color, size, and style of the font.

Fill Color: This is the color to use when filling the alternating divisions on the scale bar. When the Color button is pressed a Color form will be displayed. This form can be used to select a basic color or specify a custom color.

Sizing and Moving the Scale Bar

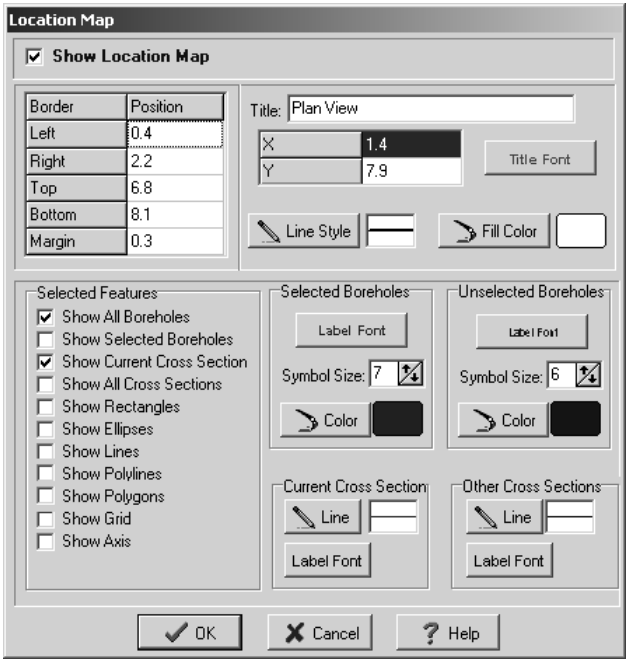
The size and position of the scale bar can be changed using the Scale Bar form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the scale bar, position the mouse in the center of the scale bar and drag it to its new location.

Location Map

The optional location map is used to show the position of the cross-section in plan view. This view is similar to that shown when specifying the cross-section path. The position, size, and style of the location map can be customized in the template. To edit the location map select the Location Map menu item from the Edit or Popup menu. The Location Map form shown on the next page will be displayed. The following information can be entered on the Location Map form:

Show Location Map: Check to display the location map on the template.

Left: This is the position of the left side of the location map in inches or millimeters from the left side of the page. The units of measurement are specified in the page layout.



Right: This is the position of the right side of the location map in inches or millimeters from the left side of the page.

Top: This is the position of the top of the location map in inches or millimeters from the top of the page.

Bottom: This is the position of the bottom of the location map in inches or millimeters from the top of the page.

Margin: This is the size of the margin, in inches or millimeters, between the borders of the location map and the plotting area of the map.

Title: This is the optional title to use for the location map (up to 255 characters).

Title X: This is the horizontal position of the title in inches or millimeters from the left side of the page.

Title Y: This is the vertical position of the title in inches or millimeters from the top of the page.

Title Font: This is the font to use for the title. When the Title Font button is pressed a Font form will be displayed. This form can be used to select the type face, size, color, and style of the font.

Line Style: This is the style of line to use for the border of the location map. When the Line Style button is pressed a Line Properties form is displayed. This form can be used to specify the line style, width, and color.

Fill Color: This is the background color of the location map. When the Fill Color button is pressed a Color form is displayed. This form can be used to select a basic color or specify a custom color.

Selected Features: Check the boxes to display each feature on the location map.

Selected Boreholes Label Font: This is the font to use for the labels of the selected boreholes (those appearing on the cross-section).

Selected Boreholes Symbol Size: This is the size of the well symbol to use for the selected boreholes. Typically between 10 and 20.

Selected Boreholes Color: This is the color of the well symbol to use for the selected boreholes.

Unselected Boreholes Label Font: This is the font to use for the labels of the unselected boreholes (those not appearing on the current cross-section).

Unselected Boreholes Symbol Size: This is the size of the well symbol to use for the unselected boreholes. Typically between 10 an 20.

Unselected Boreholes Color: This is the color of the well symbol to use for the unselected boreholes. When the Color button is pressed a Color form will be displayed. This form can be used to select a basic color or specify a custom color.

Current Cross Section Line Style: This is the line style to use to draw the path of the displayed cross-section on the location map.

Current Cross Section Label Font: This is the font to use for the labels of the current cross-section.

Other Cross Section Line Style: This is the line style to use to draw the path of the other cross-sections on the location map.

Other Cross Section Label Font: This is the font to use for the labels of the other cross-sections.

Sizing and Moving the Location Map

The size and position of the location map can be changed using the Location Map form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the location map, position the mouse in the center of the legend and drag it to its new location.

Paragraph Text

Floating paragraph text boxes can be added anywhere on a template. These text boxes are displayed over top of any information on the template. There is no limit to the number of paragraph text boxes that can be displayed. Paragraph text boxes are typically used to add comments to a cross-section.

Adding Paragraph Text

There are two methods that can be used to add a Paragraph Text box to a template:

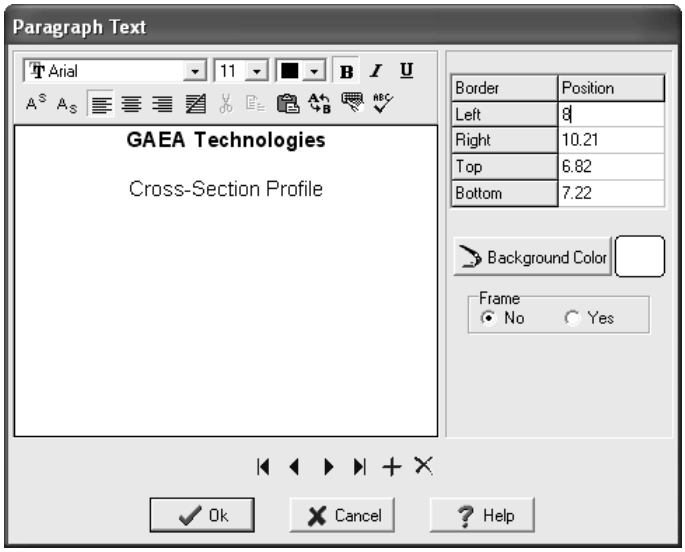
1. Click on the Paragraph button on the Toolbar. Next click on the location of the upper left corner of the paragraph text box. Then while holding the left mouse button down drag the mouse to the location of the lower right corner. After the button has been released, the Paragraph Text form shown in the section below will be displayed.

2. Select the Paragraph Text menu item from the Edit menu or Popup menu and then click on the Add button on the Paragraph Text form. This will create a new paragraph. Using this method, the location of the paragraph must be specified on the form as described below.

Editing Paragraph Text

Existing Paragraph data can be edited by selecting the Paragraph Text menu item of the Edit or Popup menus or by clicking the left mouse button inside the paragraph on the template. The Paragraph Text form below will then be displayed.

The following information can be specified on this form:



Text: This is the text for the paragraph. There is no limit to the length of the text. The Rich Text toolbar at the top of the form is used to format the text.

Left: This is the position of the left border of the paragraph in inches or millimeters from the left side of the page. If the Paragraph button on the toolbar is used to create the paragraph this position will be filled in by the program. The units of measurement are specified in the page layout.

Right: This is the position of the right border of the paragraph in inches or millimeters from the left side of the page. If the Paragraph button on the toolbar is used to create the paragraph this position will be filled in by the program.

Top: This is the position of the top border of the paragraph in inches or millimeters from the top of the page. If the Paragraph button on the toolbar is used to create the paragraph this position will be filled in by the program.

Bottom: This is the position of the bottom border of the paragraph in inches or millimeters from the top of the page. If the Paragraph button on the toolbar is used to create the paragraph this position will be filled in by the program.

Background Color: This is the background color of the paragraph text box. When the Background Color button is pressed a Color form will be displayed. Using this form a basic color can be selected or a custom color can be specified.

Frame: Select "yes" to display a frame around the paragraph text.

Frame Width: This is the line width of the frame around the paragraph text. If no frame is selected above, this field will not be displayed.

Frame Color: This is the color of the frame to display around the paragraph text. When the Frame Color button is pressed a Color form will be displayed. Using this form a basic color can be selected or a custom color can be specified. If no frame is selected above, this field will not be displayed.

At the top of the Paragraph Text form is the Rich Text toolbar, this toolbar can be used to modify the font characteristics of the text. Before selecting a speed button, the text to be modified should be selected with the mouse. The speed buttons of the toolbar perform the following functions:

The **Font Typeface** box is used to select the name of the font to use for the selected text.

The **Font Size** box is used to set the size of the font for the selected text.

The **Font Color** box is used to select the color of the font for the selected text.

The **Bold** button is used to toggle the bold attribute of the selected text on and off.

The **Italics** button is used to toggle the italic attribute of the selected text on and off.

The **Underline** button is used to toggle the underline attribute of the selected text on and off.

The **Superscript** button is used to toggle the superscript attribute of the selected text on and off.

The **Subscript** button is used to toggle the subscript attribute of the selected text on and off.

The **Left Justify** button will left justify the selected text.

The **Center Justify** button will center justify the selected text.

The **Right Justify** button will right justify the selected text.

The **Select All** button will select all of the text.

The **Cut** button will remove the selected text and place it in the clipboard.

The **Copy** button will copy the selected text to the clipboard.

The **Paste** button will paste the text in the clipboard, at the current position of the cursor in the text.

The **Replace** button will replace the specified text.

The **Symbol** button will display the Symbol form. This form is used to place a symbol at the current cursor position in the text. To select a symbol use the Font box to select the font containing the symbol and then select the desired symbol. After the desired symbol has been selected, press the Ok button to insert it into the text field. The WinFence program comes with a font called "GAEA Symbols" that contains a variety of well and other symbols.

The **Spell Check** button will display the Spell Checker form and will check the spelling in the text field. The dictionary used to check the spelling is set in the program Preferences (see Chapter 3). When the Add button is pressed the word will be appended to the custom dictionary.

Sizing and Moving Paragraph Text

The size and position of the paragraph text can be changed using the Paragraph Text form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the paragraph text, position the mouse in the center of the paragraph and drag it to its new location.

Bitmaps

Bitmaps contained in Windows bitmap (BMP) files can be added anywhere on a template. These bitmaps can be used to show company logos, site plans, and other graphical information. Bitmaps are displayed over top of any information on the template. There is no limit to the number of bitmaps that can be displayed.

Adding Bitmaps

There are two methods that can be used to add a bitmap to a template:

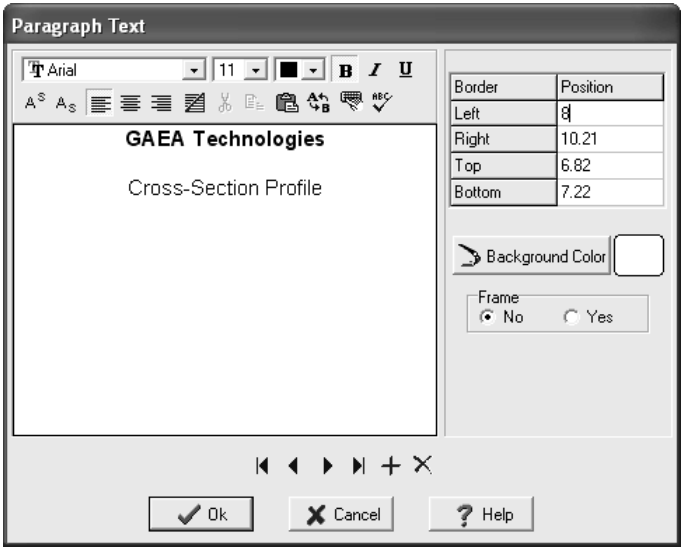
1. Click on the Bitmap button on the Toolbar. Next click on the location of the center of the bitmap. After the button has been released, the Open form shown below will be displayed. Select the bitmap file and then press the Open button.

2. By selecting the Bitmaps menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Open form on the previous page will then be displayed. Select the bitmap file and then press the Open button. Using this method, the location of the bitmap must be specified on the form as described below.

Editing Bitmaps

Existing bitmaps can be edited by selecting the Bitmaps menu item of the Edit or Popup menus or by clicking the left mouse button inside the bitmap on the template. The Bitmap Information form on the next page will then be displayed.

The following information can be specified on this form:



File Name: This is the name of the bitmap file to display on the template. To change the name of the file click on the button to the right of the name. If the button to the right is pressed a Open bitmap file form will be displayed. Select the desired file and then press the Open button.

Stretch Bitmap: Select "yes" to stretch the bitmap to fit within the specified borders. If no is selected, only the center of the bitmap can be entered for the position. If the Bitmap button on the toolbar is used to add the bitmap, Stretch Bitmap is set to "No".

Maintain Aspect Ratio: Select "yes" to keep the aspect ratio of the bitmap the same as stored in the file. If "yes" is selected the bottom of the bitmap will be automatically adjusted to maintain the aspect ratio. If Stretch Bitmap is set to "No", then this field will not be displayed and it is assumed that the aspect ratio is maintained.

Left: This is the position of the left border of the bitmap in inches or millimeters from the left side of the page. If the Bitmap button on the toolbar is used to create the bitmap, this field will not be displayed. If Stretch Bitmap is set to "No" then this field will not be displayed. The units of measurement are specified in the page layout.

Right: This is the position of the right border of the bitmap in inches or millimeters from the left side of the page. If the Bitmap button on the toolbar is used to create the bitmap, this field will not be displayed. If Stretch Bitmap is set to "No" then this field will not be displayed.

Top: This is the position of the top border of the bitmap in inches or millimeters from the top of the page. If the Bitmap button on the toolbar is used to create the bitmap, this field will not be displayed. If Stretch Bitmap is set to “No”, then this field will not be displayed.

Bottom: This is the position of the bottom border of the bitmap in inches or millimeters from the top of the page. If the Stretch Bitmap is set to No or Maintain Aspect Ratio is set to “Yes”, then this field will not be displayed and the bottom will be calculated by the program.

Center X: This is the bitmap's horizontal center in inches or millimeters from the left side of the page. If Stretch Bitmap is set to “Yes”, this field will not be displayed. If the Bitmap button on the toolbar is used to add the bitmap, this field will be filled in by the program.

Center Y: This is the bitmap's vertical center in inches or millimeters from the top of the page. If Stretch Bitmap is set to “Yes”, this field will not be displayed. If the Bitmap button on the toolbar is used to add the bitmap, this field will be filled in by the program.

Sizing and Moving Bitmaps

The size and position of the bitmap text can be changed using the Bitmap Information form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the bitmap text, position the mouse in the center of the bitmap and drag it to its new location.

Lines

Horizontal, vertical, and diagonal lines and arrows can be added anywhere on a template. There is no limit to the number of lines and arrows that can be added.

Adding a Line

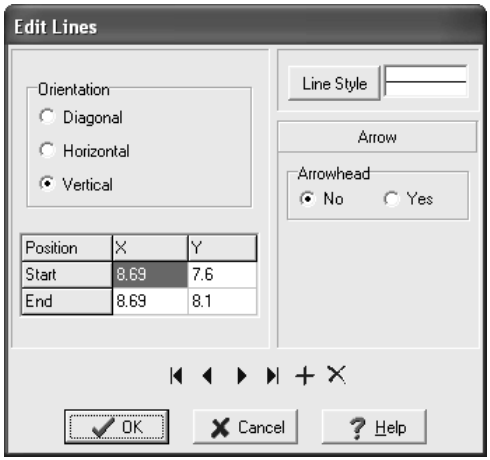
There are two methods that can be used to add a line or arrow to a template:

1. By clicking on the Line button on the Toolbar. Next using the left mouse button click on the location of the starting point of the line or arrow. Then while holding down the left mouse button, drag the cursor to the end of the line or arrow and release the mouse button. The Edit Lines form described in the next section will then be displayed.

2. By selecting the Lines menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Edit Lines form described in the next section will then be displayed. Using this method, the location of the line must be specified on the form.

Editing a Line

Existing lines and arrows can be edited by selecting the Lines menu item of the Edit or Popup menus or by clicking the left mouse button on the start or end point of the line. The Edit Lines form below will then be displayed.



The following information can be entered and edited using this form:

Orientation: This is the orientation of the line, either diagonal, horizontal, or vertical. If the orientation is set to horizontal, the vertical position will be set to the y position of the start of the line. If the orientation is set to vertical, the horizontal position will be set to the x position of the start of the line.

Start X: This is the horizontal position of the start of the line in inches or millimeters from the left side of the page. If the Line button on the toolbar is used to create the line, the program will fill in this field. The units of measurement are specified in the page layout.

Start Y: This is the vertical position of the start of the line in inches or millimeters from the top of the page. If the Line button on the toolbar is used to create the line, the program will fill in this field.

End X: This is the horizontal position of the end of the line in inches or millimeters from the left side of the page. If the Line button on the toolbar is used to create the line, this field will be filled in by the program.

End Y: This is the vertical position of the end of the line in inches or millimeters from the top of the page. If the Line button on the toolbar is used to create the line, this field will be filled in by the program.

Line Style: This is the style of the line. The line style can be changed by pressing the Line Style button. A Line Properties form will be displayed. Using this form the style, color, and width of the line can be set.

Arrowhead: To display an arrowhead at the start or end of the line select yes.

Arrow Position: This is position to place the arrowhead, either at the start or end of the line. If no arrowhead is selected above, this field will not appear.

Arrowhead Size: This is the size of the arrowhead. If no arrowhead is selected above, this field will not appear.

Rectangles

Rectangles can be added anywhere on a template. There is no limit to the number of rectangles that can be added.

Adding a Rectangle

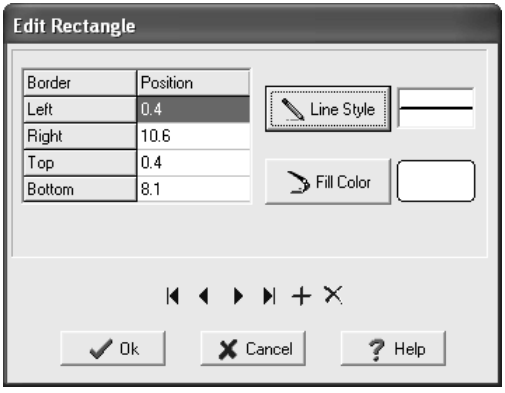
There are two methods that can be used to add a rectangle to a template:

1. By clicking on the Rectangle button on the Toolbar. Next using the left mouse button click on the location of the upper left corner of the rectangle. Then while holding down the left mouse button, drag the cursor to the lower right corner of the rectangle and release the mouse button. The Edit Rectangle form described in the next section will then be displayed.

2. By selecting the Rectangles menu item from the Edit menu or Popup menu and then clicking on the Add button on the form. The Edit Rectangles form described in the next section will then be displayed. Using this method, the location of the rectangle must be specified on the form.

Editing a Rectangle

Existing rectangles can be edited by selecting the Rectangles menu item of the Edit or Popup menus or by clicking the left mouse button inside the rectangle. The Edit Rectangle form below will then be displayed.



The following information can be entered and edited using this form:

Left: This is the position of the left border of the rectangle in inches or millimeters from the left side of the page. If the Rectangle button on the toolbar is used to create the rectangle, the program will fill in this position. The units of measurement are specified in the page layout.

Right: This is the position of the right border of the rectangle in inches or millimeters from the left side of the page. If the Rectangle button on the toolbar is used to create the rectangle, this position will be filled in by the program.

Top: This is the position of the top border of the rectangle in inches or millimeters from the top of the page. If the Rectangle button on the toolbar is used to create the rectangle, this position will be filled in by the program.

Bottom: This is the position of the bottom border of the rectangle in inches or millimeters from the top of the page. If the Rectangle button on the toolbar is used to create the rectangle, this position will be filled in by the program.

Line Style: This is the style of the rectangle border. The line style can be changed by pressing the Line Style button a Line Properties form will be displayed. Using this form the style, color, and width of the rectangle can be set.

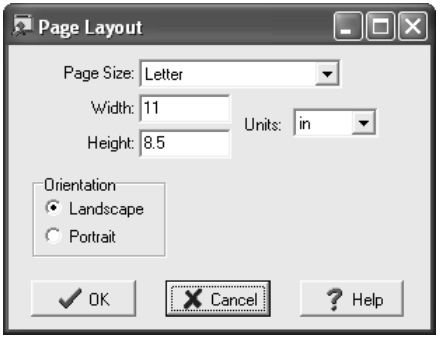
Fill Color: This is the color to use to fill the inside of the rectangle. When the Fill Color button is pressed a Color form will be displayed. Using this form a basic color can be selected or a custom color can be specified.

Sizing and Moving Rectangles

The size and position of a rectangle can be changed using the Edit Rectangle form or the mouse. To adjust the size using the mouse click on a border and drag it to its new location. To move the rectangle, position the mouse in the center of the rectangle and drag it to its new location.

Page Layout

The page layout is used to set the paper size and orientation for the printed cross-section. To change the page layout select the Page Layout menu item from the Edit or Popup menu. The Page Setup form below will be displayed.



The following information can be entered on the Page Setup form:

Page Size: This is the page size of the template. When the arrow at the right is pressed, a list of available page sizes is displayed.

Inches or Millimeters: The units for the width and length of the page. These units will be used when specifying the layout of the legend. If the Page Size is "Custom", the units can be set to either inches or millimeters.

Width: If the page size is specified as "custom", the page horizontal width in inches or millimeters must be specified.

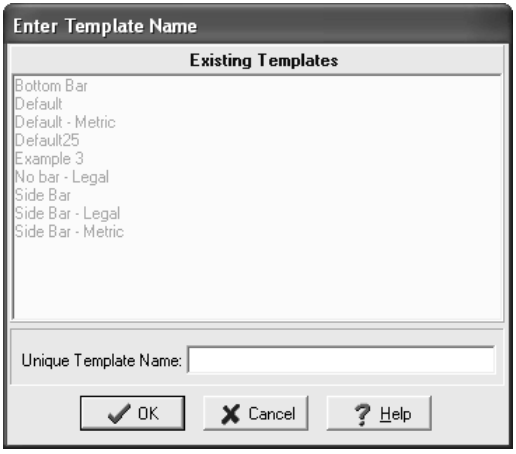
Length: If the page size is specified as "custom", the page vertical length in inches or millimeters must be specified.

Orientation: This is the orientation of the page; either portrait (longer side is vertical) or landscape (longer side is horizontal).

Saving a Template

To save the template either select the Save Template menu item from the File menu or click on the Save button on the Template toolbar.

The template can also be saved under a new name by selecting the SaveAs button on the Template toolbar. The Enter Template Name form below will be displayed. This form will list the current templates in the database. Enter a unique name for the template and then press the Ok button.



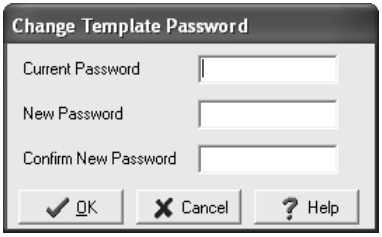
Deleting a Template

To delete a template from the database select the Delete Template menu item on the File menu. The Delete Template form shown below will be displayed. Select the template to delete and press the Ok button.

Setting a Password for the Template

It maybe advantageous for some companies to create templates that have a password associated with them. In this way accidental editing of templates could be avoided since only employees knowing the password to the template would be able to edit it.

This type of template password locking is accomplished by selecting the Change Template Password menu item from the Templates submenu of the File menu. The Change Password form on the below will be displayed.



There are three editable fields on this form. These include:

Current Password: The current password of the template. If the template doesn't currently have a password then leave this blank.

New Password: The new password of the template. If you want to remove the old password then set this to blank.

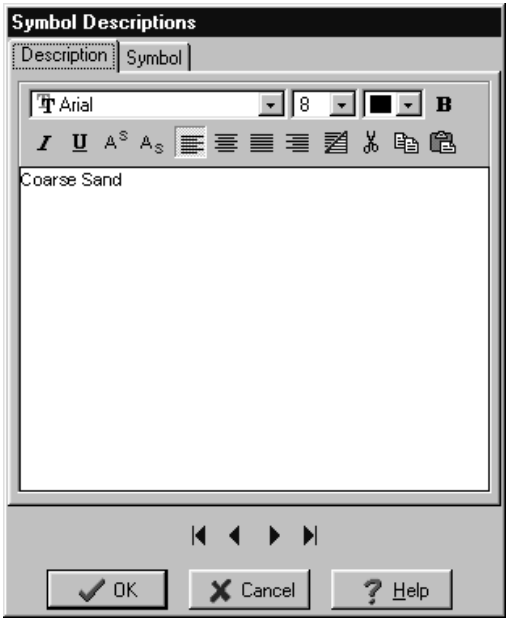
Confirm New Password: The new password again of the template. If you want to remove the old password then set this to blank.

Opening a Password Locked Template

To open a template that has been password locked simply follow the same procedure as a user would normally follow to open a Template. Right click File**,** then Templates**,** then Open Template or use the Template Toolbar to open the template. This will open up the Password **f**orm on the next page if the template is password locked, otherwise the template will open normally.

If the template is password locked, enter the password and click OK**.** If the user enters the correct password they will be permitted to edit the template otherwise the user is permitted to open the template with read only access.

7. Symbol Libraries



7. Symbol Libraries

Libraries are used to store lithologic bitmaps that can be used for the strata symbols. Each library contains 18 bitmap symbols. WinFence comes with several previously defined libraries. In addition, any number of new libraries can be created, making the number of lithologic symbols available unlimited.

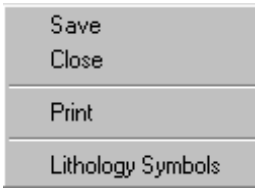
Each symbol also has a default symbol description stored in the library, which is used when creating legends. When a legend is created the default description can be used for the symbol description of the legend. If this description is then edited in the legend, the new description will only appear in that legend. The new description in the legend will not replace the default description in the library. To change the default description the description must be changed in the library as discussed below. However, the actual symbols are the same in the legend as in the library and if edited in the library the symbols in the legend will change as well.

Libraries are stored in the master project database so that they are accessible by all programs. The format of the master database is Microsoft Access 97. This database is stored in the Main Database Directory.

This chapter describes how to:

1. Create a new library
2. Edit a library
4. Save a library
5. Print a library

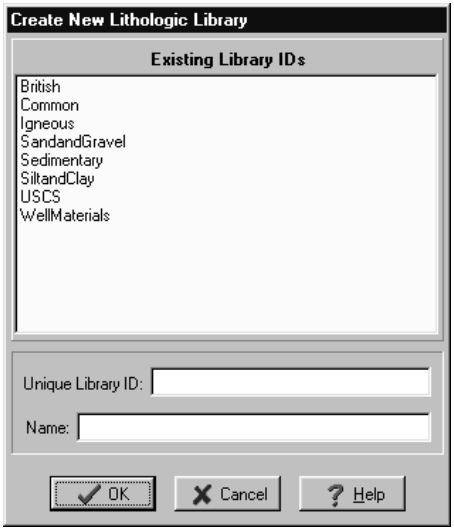
These tasks can be performed using menu commands on the Edit menu or buttons on the Library Toolbar.



Creating a New Symbol Library

Since libraries are stored in the master project database, they can be created and edited at any time (no project has to be open).

To create a library either select the New Library menu item of the Symbol Libraries submenu of the File menu or click the New button on the Library Toolbar. The Create New Lithologic Library form below will be displayed.



The following information can be entered on this form:

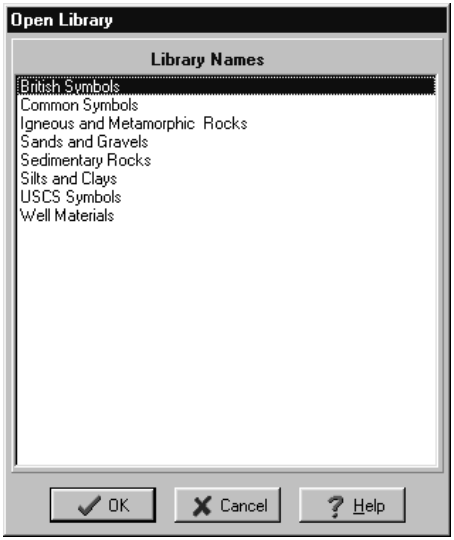
Unique Library ID: This is a unique id or name for the library (up to 100 characters). The Library ID cannot include any of the characters "/ \ # | * ( )".

Name: This is the name of the library (up to 255 characters).

After the above information has been entered a blank library will be created and displayed. This library will contain 18 blank symbols and descriptions, that can be edited and saved as discussed below.

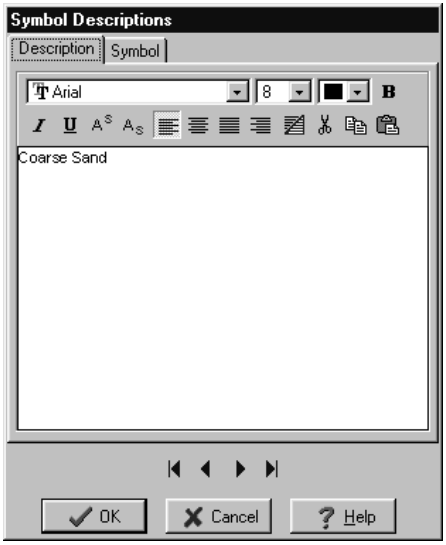
Opening a Symbol Library

To open an existing library either select the Open Library menu item of the Symbol Libraries sub-menu of the File menu or click the Open button on the Library Toolbar. The Open Library form below will be displayed. Select the library to open and then press the Ok button.



Editing a Symbol Library

Each library can contain 18 lithologic symbols. Lithologic symbols are used to represent soils and rocks. The lithologic symbols and descriptions in the library can be changed by selecting the Lithologic Symbols menu item of the Edit menu or clicking on one of the lithologic symbols in the library. The Symbol Descriptions form on the next page will then be displayed. This form has two tabs, one for the description and one for the symbol.



The buttons at the bottom of the form are used for the following:

The **Start** button displays the first symbol.

The **Previous** button displays the previous symbol.

The **Next** button displays the next symbol.

The **End** button displays the last symbol.

Description Tab

The Description tab, shown on the previous page is used to enter and edit the description for the symbol. There is no limit to the length of the description. At the top of the tab there is a Rich Text toolbar used to format the description, add symbols, and perform spell checking.

The use of the Rich Text toolbar is described below. Before selecting a speed button the text to be modified should be selected with the mouse or the cursor should be placed at the desired insertion point.

The **Font Typeface** box is used to select the name of the font to use for the selected text.

The **Font Size** box is used to set the size of the font for the selected text.

The **Font Color** box is used to select the color of the font for the selected text.

The **Bold** button is used to toggle the bold attribute of the selected text on and off.

The **Italics** button is used to toggle the italic attribute of the selected text on and off.

The **Underline** button is used to toggle the underline attribute of the selected text on and off.

The **Superscript** button is used to toggle the superscript attribute of the selected text on and off.

The **Subscript** button is used to toggle the subscript attribute of the selected text on and off.

The **Left Justify** button will left justify the selected text.

The **Center Justify** button will center justify the selected text.

The **Right Justify** button will right justify the selected text.

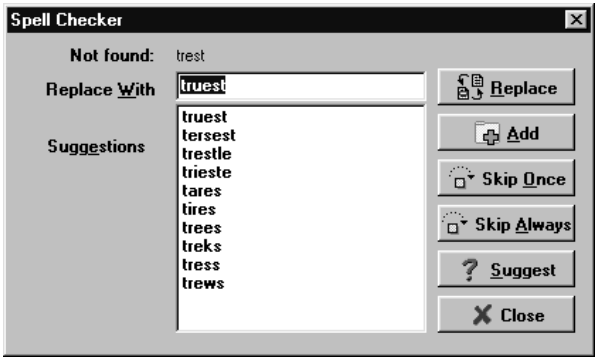
The **Select All** button will select all of the text in the description.

The **Cut** button will remove the selected text and place it in the clipboard.

The **Copy** button will copy the selected text to the clipboard.

The **Paste** button will paste the text in the clipboard, at the current position of the cursor in the description.

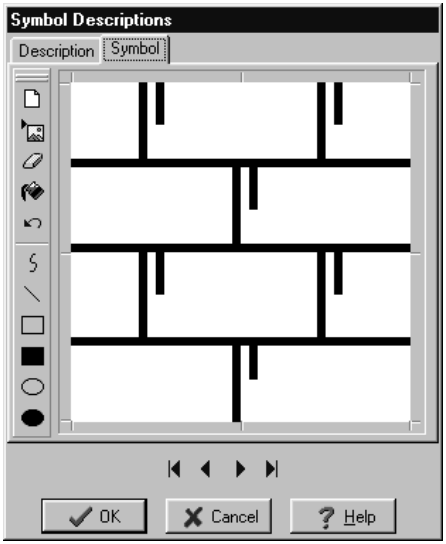
The **Spell Check** button will display the Spell Checker form shown below and will check the spelling in the description. The dictionary used to check the spelling is set in the program Preferences (see Chapter 3). When the Add button is pressed the word will be appended to the custom dictionary.



Symbol Tab

The Symbol tab is used to create and edit the symbols. At the left side of the tab there is a toolbar used to edit the symbol.

The buttons on the toolbar perform the following actions:



The **Clear** button is used to erase the current symbol and provide a blank page.

The **Import Picture** button is used to import a bitmap picture from a file into the current symbol. When this button is pressed, the Open bitmap form will be displayed. Select the bitmap file to import and then press the Open button.

The **Erase** button is used to delete parts of the symbol. When this button is pressed the cursor will change to an eraser. To erase a part of the symbol, hold the left mouse button down and move the cursor over the area to be erased.

The **Fill** button is used to fill regions of symbols. When this button is pressed the cursor will change to a paint can. To fill an area click inside the region.

The **Undo** button is used to undo the previous edit operation.

The **Curve** button is used to draw a curved line on the symbol. When pressed the cursor will change to a pencil. To draw a curve, hold down the left mouse button and move the mouse. When finished drawing the line, release the mouse button.

The **Line** button is used to draw a straight line on the symbol. When pressed the cursor will change to a pencil. To draw a line, press and hold down the left mouse button at the start of the line. Move the mouse to the end of the line and release the mouse button.

The **Rectangle** button is used to draw a hollow rectangle on the symbol. When pressed the cursor will change to a cross. To draw a rectangle, press and hold down the left mouse button at the upper left corner of the rectangle. Move the mouse to the lower right corner of the rectangle and release the mouse button.

The **Filled Rectangle** button is used to draw a filled rectangle on the symbol. When pressed the cursor will change to a cross. To draw a rectangle, press and hold down the left mouse button at the upper left corner of the rectangle. Move the mouse to the lower right corner of the rectangle and release the mouse button.

The **Ellipse** button is used to draw a hollow ellipse on the symbol. When pressed the cursor will change to a cross. To draw an ellipse, press and hold down the left mouse button at the upper left corner of the ellipse. Move the mouse to the lower right corner of the ellipse and release the mouse button.

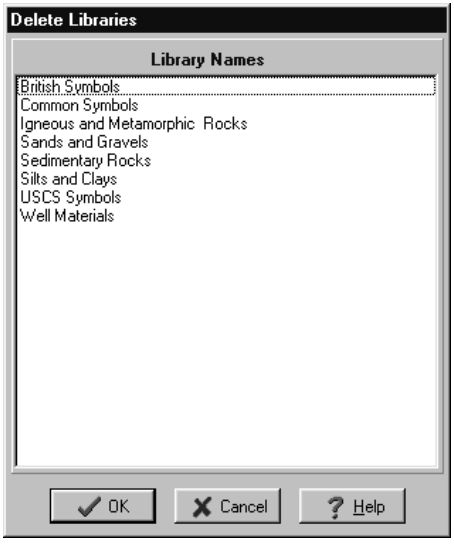
The **Filled Ellipse** button is used to draw a filled ellipse on the symbol. When pressed the cursor will change to a cross. To draw an ellipse, press and hold down the left mouse button at the upper left corner of the ellipse. Move the mouse to the lower right corner of the ellipse and release the mouse button.

Saving a Symbol Library

To save a library after it has been edited either select the Save Library menu item of the Symbol Libraries submenu of the File menu or press the Save button on the library toolbar.

Deleting a Symbol Library

To delete a library, select the Delete Library menu item from the Libraries submenu of the File Menu. The Delete Libraries form below will be displayed.

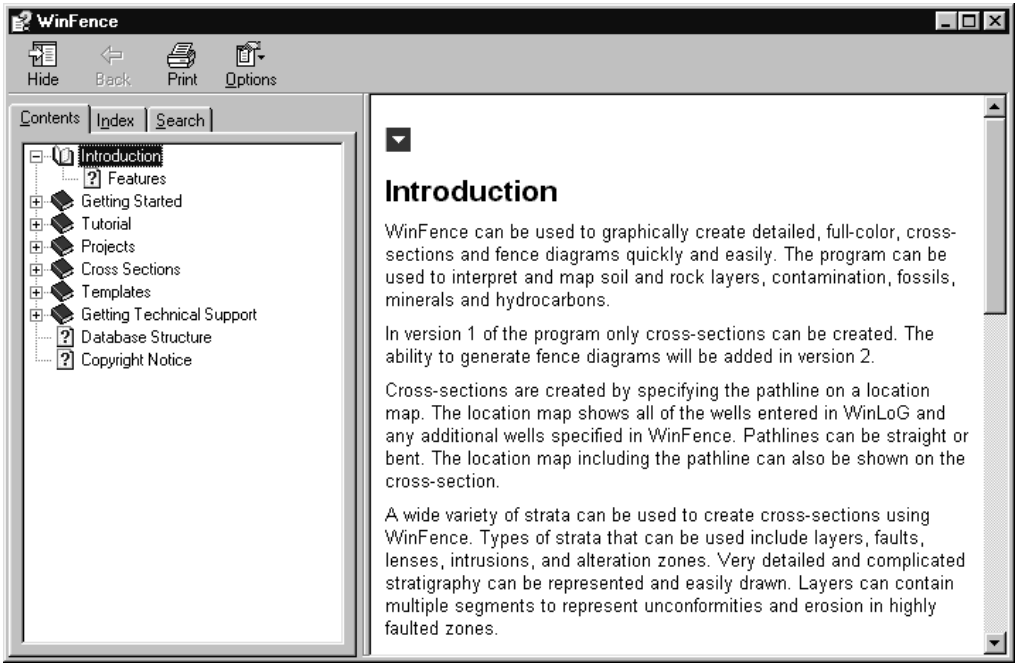


A single library can be selected by clicking on it and pressing the Open button. A range of libraries can be selected by clicking on the beginning of the range, and then holding down the Shift key while clicking on the end of the range. Multiple libraries can be selected, by holding down the CTRL key while clicking on the libraries.

Printing a Symbol Library

To print a library either click the right mouse button and select the Print menu item from the popup menu or press the Print button on the library toolbar.

8. Help


WinFence
Hide
Back
Print
Options
Contents
Index
Search
Introduction
Features
Getting Started
Tutorial
Projects
Cross Sections
Templates
Getting Technical Support
Database Structure
Copyright Notice
Introduction
WinFence can be used to graphically create detailed, full-color, cross-sections and fence diagrams quickly and easily. The program can be used to interpret and map soil and rock layers, contamination, fossils, minerals and hydrocarbons.
In version 1 of the program only cross-sections can be created. The ability to generate fence diagrams will be added in version 2.
Cross-sections are created by specifying the pathline on a location map. The location map shows all of the wells entered in WinLoG and any additional wells specified in WinFence. Pathlines can be straight or bent. The location map including the pathline can also be shown on the cross-section.
A wide variety of strata can be used to create cross-sections using WinFence. Types of strata that can be used include layers, faults, lenses, intrusions, and alteration zones. Very detailed and complicated stratigraphy can be represented and easily drawn. Layers can contain multiple segments to represent unconformities and erosion in highly faulted zones.

8. Help

WinFence uses the latest type of help system for Microsoft Windows called HTML Help. This help system uses a similar style of display as Internet Explorer.

The Help System can be used to find information on-line rather than by using this manual. Both sources will provide the same information, but are organized somewhat differently. Help will appear in a separate window with its own menu bar and controls as shown below.

This chapter describes how to:

1. Display help
2. Use help
3. Get technical support

Displaying Help

There are several ways to access the Help System, these are:

- Press the Help button. To display the help contents at any time press the help button on the Toolbar.

- Click a Help button in a form. For more information on using a particular form click the Help button.

- Choose a command from the Help menu. The Help menu offers several options:

    - Contents displays the same Help Contents that appear when you press F1 with no commands highlighted.

    - Search displays the Search dialog box and a list of keywords you can use to find topics.

    - About WinFence gives information about the program, including the 3-digit version number required by technical support.

Using Help

You can move back and forth between topics or search through the entire help system for the topic you want. Topics that are underlined can be displayed by clicking on them, and topics that have dotted underlines can have their definition displayed by clicking on them.

The tabs on the Help form are used for the following:

- **Contents** displays the complete Table of Contents of the Help System.

- **Index** is used to look for help topics listed by keyword.

- **Search** can be used to search for a specific help topic by one or more keywords.

The buttons at the top of the Help form are used for the following:

- **Hide** is used to hide the tabs on the left side of the form.

- **Back** displays the previous help topic, if any.

- **Print** is used to print the current help topic.

- **Options** is used to change the preferences for the Help system.

Getting Technical Support

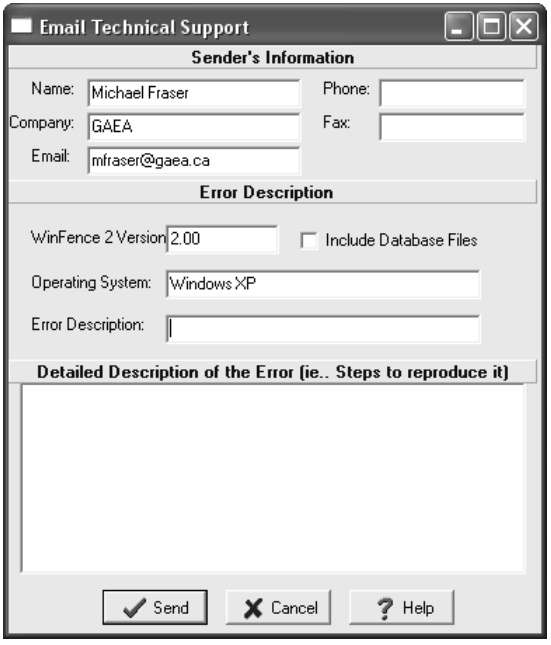
GAEA offers a variety of services to help you with your questions and problems. You will be automatically registered when you obtain an unlock code for the program. Free technical support to registered users includes assistance in the use of the software and in getting any bugs you may find in the software fixed.

There are several ways you may contact technical support as discussed below. In version 2 an automated technical support option has been added. This is our preferred method since it provides us with the maximum amount of information to assist you.

Automated Technical Support

In version 2, you can now send cross-sections, templates, and databases to GAEA for technical support automatically within the program without having to first save them as exchange files.

To send the information to technical support select the Email Section/Template menu item from the Help menu. The Email Support form below will then be displayed.



The following information can be entered on this form:

Name: Your name.

Company: Your companies name.

Email: Your email address.

Phone: Your phone number.

Fax: Your fax number.

WinFence Version: The version of WinFence you are using. This should be automatically filled in by the program.

Include Database Files: The include Database Files check box allows you to include the database files you are currently working on. However, it should only be used if absolutely necessary since the database files are very large and many email servers are unable to send them.

Operating System: Your computer's operating system (i.e Windows 98, 2000, NT, XP, etc).

Error Description: A short description of your error. For example, the user might get a floating point error and put that name in the description text box.

Detailed Description of Error: Enter a detailed description of the error including what you were doing when you got the error, what menu items you used, what data you were entering, and whether the problem occurs all of the time or only occasionally.

The **Send** button will email the information to GAEA support when you are finished filling out the form.

Other Methods to Contact Technical Support

To expedite support services, we prefer electronic communications, through email or the Internet. These communications minimize the possibility for any mistakes, and allow us to better track your request. You can email technical support by selecting the Email Technical Support menu item from the Help menu. This menu item will create an email message using your default email program.

To connect to GAEA's Internet site, select the GAEA's Web Site menu item from the Help menu.

Below are the various methods to contact technical support:

Service	Contact Method
Web Site	http:\\www.gaea.ca
E-mail	support@gaea.ca
Phone	(905) 666-7527
FAX	(905) 666-3744
Mail	GAEA Technologies Ltd. 87 Garden Street Whitby, Ontario Canada L1N 9E7

After receiving your communication, GAEA will respond promptly with either the solution to the problem or a schedule for solving the problem.

Before Contacting GAEA

Before contacting technical support, we suggest you try the following to help us resolve your problem.

- Determine if the problem is specific to the cross-section you are creating. Does it occur with other templates or other cross-section?
- Does the problem occur every time or intermittently?
- If you have another PC, does the problem occur on it?

Information to Provide

When contacting GAEA, please include or have the following information available.

- The 3-digit version of the WinFence program you are using. This can be obtained from the About form on the Help menu.
- A description of the problem to help us duplicate the problem. Including any error messages.
- Copies of the sieve analysis and template files. These can be exported in Exchange format and then emailed to us.
- The type and model of your PC.
- The Windows version you are using.